

CONTRACT DOCUMENTS AND
TECHNICAL SPECIFICATIONS FOR THE
CONSTRUCTION OF

**BARFIELD CRESCENT PARK
HVAC IMPROVEMENTS**

City of Murfreesboro, TN
APRIL 2015

Prepared by

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Project No. 13-09-0201

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ADVERTISEMENT FOR BIDS
CONSTRUCTION OF THE BARFIELD CRESCENT PARK HVAC IMPROVEMENTS

Sealed proposals will be received by the City of Murfreesboro Parks and Recreation Department, City Hall, Council Chambers, 111 West Vine Street, Murfreesboro, Tennessee, until 2:00 p.m., on Thursday, April 30, 2015, for the Construction of the Barfield Crescent Park HVAC Improvements.

The work includes the following elements:

The project includes improvements to the 2 existing concessions buildings at the Barfield Crescent Park in Murfreesboro, TN. The work includes the addition of HVAC systems, duct work and all electrical requirements, concrete and fencing on the exterior of the buildings, the installation of air curtains, the installation of a grill and hood, and the installation of a grease removal system as shown on the plans and listed in the contract documents.

Plans, specifications, and contract documents may be examined at the City of Murfreesboro, **the Builders Exchange of Nashville, TN** or may be obtained from Wiser Consultants, LLC, at 1427 Kensington Square Court, Murfreesboro, Tennessee 37130, upon payment of a non-refundable amount of one hundred dollars (\$100.00).

A pre-bid conference will be held at 10:00 a.m. on April 22, 2015 at the Murfreesboro Parks and Recreation Office located at 697 Veteran's Parkway, Murfreesboro, TN 37130. Representatives of OWNER and ENGINEER shall be present to discuss the Project.

Each proposal must be accompanied by a certified or cashier's check or bid bond in the minimum amount of five percent (5%) of the contract price for the purpose of guaranteeing the bidder will enter into an acceptable contract. A contract performance and payment bond of one hundred percent (100%) of the contract price will be required.

No bid may be withdrawn for a period of sixty (60) days after bids have been opened.

Payment will be made on the 15th day of each month on the basis of ninety percent (90%) of the work completed during the previous month.

Bidding shall be in accordance with the Tennessee General Contractor's License Law. Bidders on construction over the amount of twenty-five thousand dollars (\$25,000) must be licensed contractors as required by T.C.A. 62-6-103. Each bidder shall place his/her bid in an envelope showing the **bidder's name, license number, expiration date, and that part of classification applying to the bid** in accordance with T.C.A. 62-6-119. Bids not conforming to this provision shall not be opened or considered.

A Licensed Masonry Contractor is required for bidding or performing masonry work over \$100,000 (including materials and labor). See Public Chapter 950. For project awarding authorities, Public Chapter 768 requires that bids list the **licensed masonry contractor, license number and expiration date** on the outside of a submitted bid for masonry work over \$100,000 (including materials and labor). Visit <http://tn.gov/commerce/boards/contractors/index.shtml> for additional information.

The City of Murfreesboro reserves the right to reject any and all bids and to waive technicalities.

CITY OF MURFREESBORO

By:

/s/ Robert J. Lyons

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ARTICLE 1 - DEFINED TERMS

1.01 Terms used in these Instructions to Bidders will have the meanings indicated in the General Conditions and Supplementary Conditions. Additional terms used in these Instructions to Bidders have the meanings indicated below which are applicable to both the singular and plural thereof:

- A. *Bidder*--The individual or entity who submits a Bid directly to OWNER.
- B. *Issuing Office*--The office from which the Bidding Documents are to be issued and where the bidding procedures are to be administered. The Issuing Office is the office of the ENGINEER.
- C. *Successful Bidder*--The lowest responsible Bidder submitting a responsive Bid to whom OWNER (on the basis of OWNER's evaluation as hereinafter provided) makes an award.

ARTICLE 2 - COPIES OF BIDDING DOCUMENTS

- 2.01 Complete sets of the Bidding Documents in the number and for the deposit sum, if any, stated in the Advertisement or Invitation to Bid may be obtained from the Issuing Office.
- 2.02 Complete sets of Bidding Documents must be used in preparing Bids; neither OWNER nor ENGINEER assumes any responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bidding Documents.
- 2.03 OWNER and ENGINEER in making copies of Bidding Documents available on the above terms do so only for the purpose of obtaining Bids for the Work and do not confer a license or grant for any other use.

ARTICLE 3 - QUALIFICATIONS OF BIDDERS

- 3.01 To demonstrate Bidder's qualifications to perform the Work, Bidder shall submit written information on present commitments and on experience. Regarding experience, submit listing of at least three (3) similar projects constructed by the Bidder in the last five (5) years. The list should include a project name, project owner, and project owner's contact.
- 3.02 Refer to Article 19 of these Instructions to Bidders, paragraphs 19.04 and 19.05, for criteria, which may be applied in evaluation of Bidder as regards award of the Contract.
- 3.03 Refer to paragraph 4.01 of the Bid Form regarding representation as to genuineness of Bid, lack of collusion, and other related matters.

4.01 *Underground Facilities*

- A. Information and data shown or indicated in the Bidding Documents with respect to existing Underground Facilities at or contiguous to the Site is based upon information and data furnished to OWNER and ENGINEER by owners of such Underground Facilities, including OWNER, or others.

4.02 Provisions concerning responsibilities for the adequacy of data furnished to prospective Bidders with respect to subsurface conditions, other physical conditions and Underground Facilities, and possible changes in the Bidding Documents due to differing or unanticipated conditions appear in paragraphs 4.02, 4.03, and 4.04 of the General Conditions. Provisions concerning responsibilities for the adequacy of data furnished to prospective Bidders with respect to a Hazardous Environmental Condition at the Site, if any, and possible changes in the Contract Documents due to any Hazardous Environmental Condition uncovered or revealed at the Site which was not shown or indicated in the Drawings or Specifications or identified in the Contract Documents to be within the scope of the Work appear in paragraph 4.06 of the General Conditions.

4.03 On request, OWNER will provide Bidder access to the Site to conduct such examinations, investigations, explorations, tests, and studies as Bidder deems necessary for submission of a Bid. Bidder shall fill all holes and clean up and restore the Site to its former condition upon completion of such explorations, investigations, tests, and studies.

4.04 Reference is made of the Supplementary Conditions for the identification of the general nature of other work that is to be performed at the Site by OWNER or others (such as utilities and other prime contractors) that relates to the Work for which a Bid is to be submitted. On request, OWNER will provide to each Bidder for examination access to or copies of Contract Documents (other than portions thereof related to price) for such other work.

4.05 It is the responsibility of each Bidder before submitting a Bid to:

- A. examine and carefully study the Bidding Documents, including any Addenda and the other related data identified in the Bidding Documents;
- B. visit the Site and become familiar with and satisfy Bidder as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work. Property Owners must be contacted prior to the site visit. Owner may supply Bidder with list of property owners affected by improvements.
- C. become familiar with and satisfy Bidder as to all federal, state, and local Laws and Regulations that may affect cost, progress, or performance of the Work;
- D. obtain and carefully study (or assume responsibility for doing so) all additional or supplementary examinations, investigations, explorations, tests, studies, and data concerning conditions (surface, subsurface, and Underground Facilities) at or contiguous to the Site which may affect cost, progress, or performance of the Work or which relate to any aspect of the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder,

including any specific means, methods, techniques, sequences, and procedures of construction expressly required by the Bidding Documents, and safety precautions and programs incident thereto;

- E. agree at the time of submitting its Bid that no further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of its Bid for performance of the Work at the price bid and within the times and in accordance with the other terms and conditions of the Bidding Documents;
 - F. correlate the information known to Bidder, information and observations obtained from visits to the Site, reports and drawings identified in the Bidding Documents, and all additional examinations, investigations, explorations, tests, studies, and data with the Bidding Documents;
 - G. promptly give ENGINEER written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder discovers in the Bidding Documents and confirm that the written resolution thereof by ENGINEER is acceptable to Bidder; and
 - H. determine that the Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance of the Work.
- 4.06 The submission of a Bid will constitute an incontrovertible representation by Bidder that Bidder has complied with every requirement of this Article 4, that without exception the Bid is premised upon performing and furnishing the Work required by the Bidding Documents and applying any specific means, methods, techniques, sequences, and procedures of construction that may be shown or indicated or expressly required by the Bidding Documents, that Bidder has given ENGINEER written notice of all conflicts, errors, ambiguities, and discrepancies that Bidder has discovered in the Bidding Documents and the written resolutions thereof by ENGINEER are acceptable to Bidder, and that the Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performing and furnishing the Work.

ARTICLE 5 - PRE-BID CONFERENCE

- 5.01 **A pre-bid conference will be held at 10:00 a.m. on April 22, 2015 at the Murfreesboro Parks and Recreation Office located at 697 Veteran's Parkway, Murfreesboro, TN 37130.** Representatives of OWNER and ENGINEER shall be present to discuss the Project. Bidders are required to attend and participate in the conference. ENGINEER will transmit to all prospective Bidders of record such Addenda as ENGINEER considers necessary in response to questions arising at the conference. Oral statements may not be relied upon and will not be binding or legally effective.

ARTICLE 6 - SITE AND OTHER AREAS

- 6.01 The Site is identified in the Bidding Documents. All additional lands and access thereto required for temporary construction facilities, construction equipment, or storage of materials and equipment to be incorporated in the Work are to be obtained and paid for by CONTRACTOR. Easements for permanent structures or permanent changes in existing facilities are to be obtained and paid for by OWNER unless otherwise provided in the Bidding Documents.

ARTICLE 7 - INTERPRETATIONS AND ADDENDA

- 7.01 All questions about the meaning or intent of the Bidding Documents are to be submitted to ENGINEER in writing. Interpretations or clarifications considered necessary by ENGINEER in response to such questions will be issued by Addenda mailed or delivered to all parties recorded by ENGINEER as having received the Bidding Documents. Questions received less than ten days prior to the date for opening of Bids may not be answered. Only questions answered by Addenda will be binding. Oral and other interpretations or clarifications will be without legal effect.
- 7.02 Addenda may be issued to clarify, correct, or change the Bidding Documents as deemed advisable by OWNER or ENGINEER.

ARTICLE 8 - BID SECURITY

- 8.01 A Bid must be accompanied by Bid security made payable to OWNER in an amount of [5] % of Bidder's maximum Bid price and in the form of a certified or cashier's check or a Bid Bond [on the form attached] issued by a surety meeting the requirements of paragraphs 5.01 and 5.02 of the General Conditions.
- 8.02 The Bid security of the Successful Bidder will be retained until such Bidder has executed the Contract Documents, furnished the required contract security and met the other conditions of the Notice of Award, whereupon the Bid security will be returned. If the Successful Bidder fails to execute and deliver the Contract Documents and furnish the required contract security within 15 days after the Notice of Award, OWNER may annul the Notice of Award and the Bid security of that Bidder will be forfeited. The Bid security of other Bidders whom OWNER believes to have a reasonable chance of receiving the award may be retained by OWNER until the earlier of seven days after the Effective Date of the Agreement or 61 days after the Bid opening, whereupon Bid security furnished by such Bidders will be returned.
- 8.03 Bid security of other Bidders whom OWNER believes do not have a reasonable chance of receiving the award will be returned within seven days after the Bid opening.

ARTICLE 9 - CONTRACT TIMES

- 9.01 The number of days within which, or the dates by which, the Work is to be (a) Substantially Completed and (b) also completed and ready for final payment are set forth in the Agreement.

ARTICLE 10 - LIQUIDATED DAMAGES

- 10.01 Provisions for liquidated damages, if any, are set forth in the Agreement.

ARTICLE 11 - SUBSTITUTE AND "OR-EQUAL" ITEMS

- 11.01 The Contract, if awarded, will be on the basis of materials and equipment specified or described in the Bidding Documents without consideration of possible substitute or "or-equal" items. Whenever it is specified or described in the Bidding Documents that a substitute or "or-equal" item of material or equipment may be furnished or used by CONTRACTOR if acceptable to ENGINEER, application for such acceptance will not be considered by ENGINEER until after the Effective Date of the Agreement. The procedure for submission of any such application by CONTRACTOR and consideration by ENGINEER is set forth in the General Conditions and may be supplemented in the General Requirements.

ARTICLE 12 - SUBCONTRACTORS, SUPPLIERS, AND OTHERS

- 12.01 If the Supplementary Conditions require the identity of certain Subcontractors, Suppliers, individuals, or entities to be submitted to OWNER in advance of a specified date prior to the Effective Date of the Agreement, the apparent Successful Bidder, and any other Bidder so requested, shall within five days after Bid opening, submit to OWNER a list of all such Subcontractors, Suppliers, individuals, or entities proposed for those portions of the Work for which such identification is required. Such list shall be accompanied by an experience statement with pertinent information regarding similar projects and other evidence of qualification for each such Subcontractor, Supplier, individual, or entity if requested by OWNER. If OWNER or ENGINEER, after due investigation, has reasonable objection to any proposed Subcontractor, Supplier, individual, or entity, OWNER may, before the Notice of Award is given, request apparent Successful Bidder to submit a substitute,[in which case apparent Successful Bidder shall submit an acceptable substitute, Bidder's Bid price will be increased (or decreased) by the difference in cost occasioned by such substitution, and OWNER may consider such price adjustment in evaluating Bids and making the contract award.
- 12.02 If apparent Successful Bidder declines to make any such substitution, OWNER may award the Contract to the next lowest Bidder that proposes to use acceptable Subcontractors, Suppliers, individuals, or entities. Declining to make requested substitutions will not constitute grounds for forfeiture of the Bid security of any Bidder. Any Subcontractor, Supplier, individual, or entity so listed and against which OWNER or ENGINEER makes no written objection prior to the giving of the Notice of Award will be deemed acceptable to OWNER and ENGINEER subject to revocation of such acceptance after the Effective Date of the Agreement as provided in paragraph 6.06 of the General Conditions.
- 12.03 CONTRACTOR shall not be required to employ any Subcontractor, Supplier, individual, or entity against whom CONTRACTOR has reasonable objection.

ARTICLE 13 - PREPARATION OF BID

- 13.01 The Bid form is included with the Bidding Documents. Additional copies may be obtained from ENGINEER.

- 13.02 All blanks on the Bid form shall be completed by printing in ink or by typewriter and the Bid signed. A Bid price shall be indicated for each [section, Bid item, alternative, adjustment unit price item, and unit price item] listed therein, or the words "No Bid," "No Change," or "Not Applicable" entered.
- 13.03 A Bid by a corporation shall be executed in the corporate name by the president or a vice-president or other corporate officer accompanied by evidence of authority to sign. The corporate seal shall be affixed and attested by the secretary or an assistant secretary. The corporate address and state of incorporation shall be shown below the signature.
- 13.04 A Bid by a partnership shall be executed in the partnership name and signed by a partner (whose title must appear under the signature), accompanied by evidence of authority to sign. The official address of the partnership shall be shown below the signature.
- 13.05 A Bid by a limited liability company shall be executed in the name of the firm by a member and accompanied by evidence of authority to sign. The state of formation of the firm and the official address of the firm must be shown below the signature.
- 13.06 A Bid by an individual shall show the Bidder's name and official address.
- 13.07 A Bid by a joint venture shall be executed by each joint venturer in the manner indicated on the Bid form. The official address of the joint venture must be shown below the signature.
- 13.08 All names shall be typed or printed in ink below the signatures.
- 13.09 The Bid shall contain an acknowledgment of receipt of all Addenda, the numbers of which shall be filled in on the Bid form.
- 13.10 The address and telephone number for communications regarding the Bid shall be shown.

ARTICLE 14 - BASIS OF BID; EVALUATION OF BIDS

14.01 *Unit Price*

- A. Bidders shall submit a Bid on a unit price basis for each item of Work listed in the Bid schedule.
- B. The total of all estimated prices will be determined as the sum of the products of the estimated quantity of each item and the unit price Bid for the item. The final quantities and Contract Price will be determined in accordance with paragraph 11.03 of the General Conditions.
- C. Discrepancies between the multiplication of units of Work and unit prices will be resolved in favor of the unit prices. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum. Discrepancies between words and figures will be resolved in favor of the words.

- 14.02 The Bid price shall include such amounts as the Bidder deems proper for overhead and profit on account of cash allowances, if any, named in the Contract Documents as provided in paragraph 11.02 of the General Conditions.

ARTICLE 15 - SUBMITTAL OF BID

- 15.01 Each prospective Bidder is furnished one copy of the Bidding Documents. A copy of the Bid Form contained within the Bid Documents **or** the entire Bid Document booklet must be completed and submitted with the Bid security and the following data:
- A. **Bidder Affidavit on Compliance with Drug-free Workplace Act and Certificate**
 - B. **Executed Noncollusion Affidavit of Prime Bidder**
- 15.02 The CONTRACTOR'S Name, CONTRACTOR'S license number, CONTRACTOR'S license expiration date shall be clearly identified on the outside of the envelope that contains the Bid Form and Bid Security.
- 15.03 A Bid shall be submitted no later than the date and time prescribed and at the place indicated in the advertisement or invitation to Bid and shall be enclosed in an opaque sealed envelope plainly marked with the Project title (and, if applicable, the designated portion of the Project for which the Bid is submitted), the name and address of Bidder, and shall be accompanied by the Bid security and other required documents. If a Bid is sent by mail or other delivery system, the sealed envelope containing **the Bid shall be enclosed in a separate envelope plainly marked on the outside with the notation "BID ENCLOSED."** A mailed Bid shall be addressed to **City of Murfreesboro, Parks and Recreation Department, 111 West Vine Street, Murfreesboro, TN 37130, Attention Lanny Goodwin.**

ARTICLE 16 - MODIFICATION AND WITHDRAWAL OF BID

- 16.01 A Bid may be modified or withdrawn by an appropriate document duly executed in the manner that a Bid must be executed and delivered to the place where Bids are to be submitted prior to the date and time for the opening of Bids.

ARTICLE 17 - OPENING OF BIDS

- 17.01 Bids will be opened at the time and place indicated in the advertisement or invitation to Bid and, unless obviously non-responsive, read aloud publicly. An abstract of the amounts of the base Bids and major alternates, if any, will be made available to Bidders after the opening of Bids.

ARTICLE 18 - BIDS TO REMAIN SUBJECT TO ACCEPTANCE

- 18.01 All Bids will remain subject to acceptance for the period of time stated in the Bid form, but OWNER may, in its sole discretion, release any Bid and return the Bid security prior to the end of this period.

ARTICLE 19 - AWARD OF CONTRACT

- 19.01 OWNER reserves the right to reject any or all Bids, including without limitation, nonconforming, non-responsive, unbalanced, or conditional Bids. OWNER further reserves the right to reject the Bid of any Bidder whom it finds, after reasonable inquiry and evaluation, to be non-responsive. OWNER may also reject the Bid of any Bidder if OWNER believes that it would not be in the best interest of the Project to make an award to that Bidder. OWNER also reserves the right to waive all informalities not involving price, time, or changes in the Work and to negotiate contract terms with the Successful Bidder.
- 19.02 More than one Bid for the same Work from an individual or entity under the same or different names will not be considered. Reasonable grounds for believing that any Bidder has an interest in more than one Bid for the Work may be cause for disqualification of that Bidder and the rejection of all Bids in which that Bidder has an interest.
- 19.03 In evaluating Bids, OWNER will consider whether or not the Bids comply with the prescribed requirements, and such alternates, unit prices and other data, as may be requested in the Bid Form or prior to the Notice of Award.
- 19.04 In evaluating Bidders, OWNER will consider the qualifications of Bidders and may consider the qualifications and experience of Subcontractors, Suppliers, and other individuals or entities proposed for those portions of the Work for which the identity of Subcontractors, Suppliers, and other individuals or entities must be submitted as provided in the Supplementary Conditions.
- 19.05 OWNER may conduct such investigations as OWNER deems necessary to establish the responsibility, qualifications, and financial ability of Bidders, proposed Subcontractors, Suppliers, individuals, or entities to perform the Work in accordance with the Contract Documents.
- 19.06 If the Contract is to be awarded, OWNER will award the Contract to the Bidder whose Bid is in the best interests of the Project.

ARTICLE 20 - CONTRACT SECURITY AND INSURANCE

- 20.01 Article 5 of the General Conditions, as may be modified by the Supplementary Conditions, sets forth OWNER's requirements as to performance and payment Bonds and insurance. When the Successful Bidder delivers the executed Agreement to OWNER, it must be accompanied by such Bonds.

ARTICLE 21 - SIGNING OF AGREEMENT

21.01 When OWNER gives a Notice of Award to the Successful Bidder, it shall be accompanied by the required number of unsigned counterparts of the Agreement with the other Contract Documents which are identified in the Agreement as attached thereto. Within 15 days thereafter, Successful Bidder shall sign and deliver the required number of counterparts of the Agreement and attached documents to OWNER. Within ten days thereafter, OWNER shall deliver one fully signed counterpart to Successful Bidder with a complete set of the Drawings with appropriate identification.

ARTICLE 22 - SALES AND USE TAXES

22.01 If owner were to supply material or equipment, OWNER is exempt from state sales and use taxes on materials and equipment to be incorporated in the Work.

ARTICLE 23 - RETAINAGE

23.01 Provisions concerning CONTRACTOR's rights to deposit securities in lieu of retainage are set forth in the Agreement.

ARTICLE 24 - CONTRACTS TO BE ASSIGNED

24.01 OWNER has not executed contracts for materials and equipment to be furnished and delivered to the Site for installation by CONTRACTOR.

State of Tennessee

County of Rutherford

**BIDDER AFFIDAVIT ON COMPLIANCE
WITH DRUG-FREE WORKPLACE ACT AND CERTIFICATE**

Bidder, after being first duly sworn, affirms that it has a Drug-Free Workplace Program that complies with Tennessee Code Annotated, Title 50, Chapter 9, in effect at the time of submission of its bid, at least to the extent required of governmental entities. Bidder affirms that:

1. it has received a Certificate of Compliance with the applicable proportions of the Drug-Free Workplace Act from the Department of Labor and Workforce Development and has attached a copy of such certificate to this Affidavit; or,
2. it operates a drug and alcohol testing program at least as stringent as the City of Murfreesboro's drug and alcohol testing program as contained in Sections 3005 and 3006 of the City of Murfreesboro Employee Handbook and shall, upon request, provide documentation of such program to the City.

Name of Bidder

Printed Name and Title of Principal Officer

Signature by Principal Officer

Sworn to and subscribed before me a Notary Public for the above state and county, on

This _____ day of _____, 20__.

Notary Public

My Commission Expires _____

Pursuant to T.C.A. §50-9-113, a Bidder must have a Drug-Free Workplace Program that complies with Tennessee Code Annotated, Title 50, Chapter 9 in effect at the time of submission of its bid, at least to the extent required of governmental entities.

The City of Murfreesboro has a Drug-Free Workplace Program certified by the Tennessee Department of Labor and Workforce Development pursuant to Title 50, Chapter 9. The City of Murfreesboro Drug-Free Workplace Program is set forth in City of Murfreesboro Employee Handbook Sections 3005 and 3006 (copies are available without charge upon request). City of Murfreesboro Employee Handbook Sections 3005 and 3006 provide for the random testing, reasonable suspicion testing, pre-employment testing, promotion or transfer testing, post-accident testing, return-to-duty testing, and follow-up testing of all employees classified as safety sensitive or as CDL employees for alcohol and/or drugs. Additionally, Murfreesboro Employee Handbook Section 3005 provides for reasonable suspicion testing, return-to-duty testing and follow-up testing for non-safety sensitive employees for drugs and alcohol. Such testing is conducted using the same standards as in the United States Department of Transportation Regulations established for the drug and alcohol testing of CDL operators.

A bidder for construction services is required to submit an Affidavit, as part of its bid, that attests that such bidder operates a Drug-Free Workplace Program or other drug or alcohol testing program with requirements at least as stringent as that of the program operated by the City of Murfreesboro.

Bidder may satisfy this requirement by attaching a copy of a Certificate of Compliance with the applicable provisions of the Drug-Free Workplace Act from the Department of Labor and Workforce Development to the City to the required Affidavit.

Pursuant to T.C.A. §50-9-114(d), unless suit is filed in Chancery Court, bidders shall have seven (7) calendar days to contest a contract entered into by contractors subject to the provisions of this section. Bidders who do not contest such contracts within seven (7) calendar days by filing suit in Chancery Court waive any right to challenge such contract for violating the provisions of T.C.A. §50-9-113 and T.C.A. §50-9-114. Such suits shall be brought in the Chancery Court for Rutherford County.

NONCOLLUSION AFFIDAVIT OF PRIME BIDDER

State of _____)
) ss.
County of _____)

_____, being first duly sworn, deposes and says that:

- (1) He is _____ of _____, the Bidder who has submitted the attached Bid;
- (2) He is fully informed respecting the preparation and contents of the attached Bid and of all the pertinent circumstances respecting such Bid;
- (3) Such Bid is genuine and is not a collusive or sham Bid;
- (4) Neither the said Bidder nor any of its officers, partners, owners, agents, representatives, employees, or parties in interest, including this affiant, has in any way colluded, conspired, connived, or agreed, directly or indirectly, with any other Bidder, firm, or person to submit a collusive or sham Bid in connection with the Contract for which the attached Bid has been submitted or to refrain from bidding in connection with such Contract, or has in any manner, directly or indirectly, sought by agreement or collusion or communication or conference with any other Bidder, firm, or person, to fix the price or prices in the attached Bid or of any other Bidder, or to fix any overhead, profit, or cost element of the Bid price or the Bid prices of any other Bidder, or to secure through any collusion, conspiracy, connivance, or unlawful agreement any advantage against the Owner or any person interested in the Contract; and
- (5) The price or prices quoted in the attached Bid are fair and proper and are not tainted by any collusion, conspiracy, connivance, or unlawful agreement on the part of the Bidder or any of its agents, representatives, owners, employees, or parties in interest, including this affiant.

By: _____

Title: _____

Subscribed and sworn to before me

This _____ day of _____, 20____.

By: _____

My Commission Expires _____, 20____.

NONCOLLUSUION AFFIDAVIT OF SUBCONTRACTOR

State of _____)
) ss.
County of _____)

_____, being first duly sworn, deposes and says that:

(1) He is _____ of
(owner, partner, officer, representative, or agent)
_____, hereinafter
Referred to as the "Subcontractor";

(2) He is fully informed respecting the preparation and contents of the Subcontractor's
Proposal submitted by the Subcontractor to _____
_____, the Contractor for certain work in connection with the
_____ Contract pertaining to the _____
Project in _____.

(3) Such Subcontractor's Proposal is genuine and is not a collusive or sham Proposal;

(4) Neither the Subcontractor nor any of its officers, partners, owners, agents,
representatives, employees, or parties in interest, agreed, directly or indirectly, with any
other Bidder, firm, or person to submit a collusive or sham Proposal in connection with
such Contract, or has in any manner, directly or indirectly, sought by unlawful agreement
or connivance with any other Bidder, firm or person to fix the price or prices in said
Subcontractor's Proposal, or to secure through any collusion, conspiracy, connivance, or is
unlawful agreement any advantage against the City or any person interested in the
proposed Contract; and

(5) The price or prices quoted in the Subcontractor's Proposals are fair and proper and are not
tainted by any collusion, conspiracy, connivance, or unlawful agreement on the part of the
Bidder or any of its agents, representatives, owners, employees, or parties in interest,
including this affiant.

By: _____
Title: _____

Subscribed and sworn to before me
This _____ day of _____, 20____.

By: _____

My Commission Expires _____, 20____.

BID FORM

PROJECT IDENTIFICATION: **CITY OF MURFREESBORO, TENNESSEE**
BARFIELD CRESCENT PARK HVAC IMPROVEMENTS

THIS BID IS SUBMITTED TO: **CITY OF MURFREESBORO, TENNESSEE**

SUBMITTED on _____, 20____.

State Contractor License No. _____.

1.01 The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into an Agreement with OWNER in the form included in the Bidding Documents to perform all Work as specified or indicated in the Bidding Documents for the prices and within the times indicated in this Bid and in accordance with the other terms and conditions of the Bidding Documents.

2.01 Bidder accepts all of the terms and conditions of the Advertisement or Invitation to Bid and Instructions to Bidders, including without limitation those dealing with the disposition of Bid security. The Bid will remain subject to acceptance for 60 days after the Bid opening, or for such longer period of time that Bidder may agree to in writing upon request of OWNER.

3.01 In submitting this Bid, Bidder represents, as set forth in the Agreement, that:

A. Bidder has examined and carefully studied the Bidding Documents, the other related data identified in the Bidding Documents, and the following Addenda, receipt of all which is hereby acknowledged.

<u>Addendum No.</u>	<u>Addendum Date</u>
_____	_____
_____	_____
_____	_____

B. Bidder has visited the Site and become familiar with and is satisfied as to the general, local and Site conditions that may affect cost, progress, and performance of the Work.

C. Bidder is familiar with and is satisfied as to all federal, state and local Laws and Regulations that may affect cost, progress and performance of the Work.

D. Bidder has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or contiguous to the Site and all drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site (except Underground Facilities) which have been identified in the Supplementary Conditions as provided in paragraph 4.02 of the General Conditions, and (2) reports and drawings of a Hazardous Environmental Condition, if any, which

has been identified in the Supplementary Conditions as provided in paragraph 4.06 of the General Conditions.

- E. Bidder has obtained and carefully studied (or assumes responsibility for having done so) all additional or supplementary examinations, investigations, explorations, tests, studies and data concerning conditions (surface, subsurface and Underground Facilities) at or contiguous to the Site which may affect cost, progress, or performance of the Work or which relate to any aspect of the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder, including applying the specific means, methods, techniques, sequences, and procedures of construction expressly required by the Bidding Documents to be employed by Bidder, and safety precautions and programs incident thereto.
 - F. Bidder does not consider that any further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of this Bid for performance of the Work at the price(s) bid and within the times and in accordance with the other terms and conditions of the Bidding Documents.
 - G. Bidder is aware of the general nature of work to be performed by OWNER and others at the Site that relates to the Work as indicated in the Bidding Documents.
 - H. Bidder has correlated the information known to Bidder, information and observations obtained from visits to the Site, reports and drawings identified in the Bidding Documents, and all additional examinations, investigations, explorations, tests, studies, and data with the Bidding Documents.
 - I. Bidder has given ENGINEER written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Bidding Documents, and the written resolution thereof by ENGINEER is acceptable to Bidder.
 - J. The Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance of the Work for which this Bid is submitted.
- 4.01** Bidder further represents that this Bid is genuine and not made in the interest of or on behalf of any undisclosed individual or entity and is not submitted in conformity with any agreement or rules of any group, association, organization or corporation; Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid; Bidder has not solicited or induced any individual or entity to refrain from bidding; and Bidder has not sought by collusion to obtain for itself any advantage over any other Bidder or over OWNER.
- 5.01** Bidder will complete the Work in accordance with the Contract Documents for the following price(s):

(This space intentionally left blank.)

BID SCHEDULE – BARFIELD CRESCENT PARK HVAC IMPROVEMENTS					
Base Bid Estimated Quantities and Bid Prices					
Printed Name of Bidder: _____					
Item No.	Description	Unit	Estimated Quantity	Unit Price	Amount
1	Concessions Building #1 HVAC system including concrete pad and fencing as Specified or Approved Equal (Complete)	LS	1		
2	Concessions Building #1 Air Curtains as Specified or Approved Equal (Complete)	EACH	2		
3	Concessions Building #2 HVAC system including concrete pad and fencing as Specified or Approved Equal (Complete)	LS	1		
4	Concessions Building #2 Air Curtains as Specified or Approved Equal (Complete)	EACH	2		
5	Concessions Building #2 Grill as Specified or Approved Equal (Complete)	LS	1		
6	Concessions Building #2 Hood as Specified or Approved Equal (Complete)	LS	1		
7	Concessions Building #2 Remove Existing Grease Trap and Replace as Specified (Complete)	LS	1		
	TOTAL BID PRICE				

Note 1: Submitted Shop Drawings for “Approved Equals” shall be compared to the specifications as outlined on the construction plans and included warranty.

Note 2: All work shown in plans and specifications shall be included in the bid price for a fully operational system.

Unit Prices have been computed in accordance with paragraph 11.03.B of the General Conditions.

Bidder acknowledges that estimated quantities are not guaranteed, and are solely for the purpose of comparison of Bids, and final payment for all Unit Price Bid items will be based on actual quantities provided, determined as provided in the Contract Documents.

6.01 Milestone #1 shall consist of the installation of the HVAC Systems in each building including all electrical requirements and shall be completed within 15 calendar days. **Milestone #2** shall consist of all the Work being substantially complete within 45 calendar days after the date when the Contract Times commence to run as provided in paragraph 2.03 of the General Conditions, and completed and ready for final payment in accordance with paragraph 14.07.B of the General Conditions within 60 calendar days after the date when the Contract Times commence to run.

6.02 Bidder accepts the provisions of the Agreement as to liquidated damages in the event of failure to complete the Work within the times specified above, which shall be stated in the Agreement.

7.01 The following documents are attached to and made a condition of this Bid:

- A. Required Bid security in the form of Bid Bond or certified or cashier's check;**
- B. Executed Bidder Affidavit on Compliance with Drug-free Workplace Act and Certificate;**
- C. Executed Noncollusion Affidavit of Prime Bidder.**

8.01 The terms used in this Bid with initial capital letters have the meanings indicated in the Instructions to Bidders, the General Conditions, and the Supplementary Conditions.

If Bidder is:

An Individual

Name (typed or printed): _____

By: _____ (SEAL)
(Individual's signature)

Doing business as: _____

Business address: _____

Phone No.: _____ FAX No.: _____

A Partnership

Partnership Name: _____ (SEAL)

By: _____
(Signature of general partner -- attach evidence of authority to sign)

Name (typed or printed): _____

Business address: _____

Phone No.: _____ FAX No.: _____

A Corporation

Corporation Name: _____ (SEAL)
State of Incorporation: _____
Type (General Business, Professional, Service, Limited Liability): _____

By: _____
(Signature -- attach evidence of authority to sign)

Name (typed or printed): _____

Title: _____

(CORPORATE SEAL)

Attest _____
(Signature of Corporate Secretary)

Business address: _____

Phone No.: _____ FAX No.: _____

Date of Qualification to do business is _____.

A Joint Venture

Joint Venturer Name: _____ (SEAL)

By: _____
(Signature of joint venture partner -- attach evidence of authority to sign)

Name (typed or printed): _____

Title: _____

Business address: _____

Phone No.: _____ FAX No.: _____

Joint Venturer Name: _____ (SEAL)

By: _____
(Signature -- attach evidence of authority to sign)

Name (typed or printed): _____

Title: _____

Business address: _____

Phone No.: _____ FAX No.: _____

Phone and FAX Number, and Address for receipt of official communications:

(Each joint venturer must sign. The manner of signing for each individual, partnership, and corporation that is a party to the joint venture should be in the manner indicated above.)

BID BOND

BIDDER (Name and Address):

SURETY (Name and Address of Principal Place of Business):

OWNER (Name and Address):

CITY OF MURFREESBORO – PARKS AND RECREATION DEPARTMENT
111 WEST VINE STREET
MURFREESBORO, TN 37130

BID

BID DUE DATE: April 30, 2015 2:00 p.m.

PROJECT (Brief Description Including Location):

The project includes improvements to the 2 existing concessions buildings at the Barfield Crescent Park in Murfreesboro, TN. The work includes the addition of HVAC systems, duct work and all electrical requirements, concrete and fencing on the exterior of the buildings, the installation of air curtains, the installation of a grill and hood, and the installation of a grease removal system as shown on the plans and listed in the contract documents.

BOND

BOND NUMBER: _____

DATE (Not later than Bid due date): _____

PENAL SUM: _____

(Words)

(Figures)

IN WITNESS WHEREOF, Surety and Bidder, intending to be legally bound hereby, subject to the terms printed on the reverse side hereof, do each cause this Bid Bond to be duly executed on its behalf by its authorized officer, agent, or representative.

BIDDER

SURETY

_____(Seal)

Bidder's Name and Corporate Seal

_____(Seal)

Surety's Name and Corporate Seal

By: _____

Signature and Title

By: _____

Signature and Title
(Attach Power of Attorney)

Attest: _____

Signature and Title

Attest: _____

Signature and Title

Note: (1) Above addresses are to be used for giving required notice.
(2) Any singular reference to Bidder, Surety, OWNER or other party shall be considered plural where applicable.

1. Bidder and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to pay to OWNER upon default of Bidder the penal sum set forth on the face of this Bond.

2. Default of Bidder shall occur upon the failure of Bidder to deliver within the time required by the Bidding Documents (or any extension thereof agreed to in writing by OWNER) the executed Agreement required by the Bidding Documents and any performance and payment Bonds required by the Bidding Documents.

3. This obligation shall be null and void if:

3.1. OWNER accepts Bidder's Bid and Bidder delivers within the time required by the Bidding Documents (or any extension thereof agreed to in writing by OWNER) the executed Agreement required by the Bidding Documents and any performance and payment Bonds required by the Bidding Documents, or

3.2. All Bids are rejected by OWNER, or

3.3. OWNER fails to issue a Notice of Award to Bidder within the time specified in the Bidding Documents (or any extension thereof agreed to in writing by Bidder and, if applicable, consented to by Surety when required by paragraph 5 hereof).

4. Payment under this Bond will be due and payable upon default by Bidder and within 30 calendar days after receipt by Bidder and Surety of written notice of default from OWNER, which notice will be given with reasonable promptness, identifying this Bond and the Project and including a statement of the amount due.

5. Surety waives notice of and any and all defenses based on or arising out of any time extension to issue Notice of Award agreed to in writing by OWNER and Bidder, provided that the total time for issuing Notice of Award including extensions shall not in the aggregate exceed 120 days from Bid due date without Surety's written consent.

6. No suit or action shall be commenced under this Bond prior to 30 calendar days after the notice of default required in paragraph 4 above is received by Bidder and Surety and in no case later than one year after Bid due date.

7. Any suit or action under this Bond shall be commenced only in a court of competent jurisdiction located in the state in which the Project is located.

8. Notices required hereunder shall be in writing and sent to Bidder and Surety at their respective addresses shown on the face of this Bond. Such notices may be sent by personal delivery, commercial courier or by United States Registered or Certified Mail, return receipt requested, postage pre-paid, and shall be deemed to be effective upon receipt by the party concerned.

9. Surety shall cause to be attached to this Bond a current and effective Power or Attorney evidencing the authority of the officer, agent or representative who executed this Bond on behalf of Surety to execute, seal and deliver such Bond and bind the Surety thereby.

10. This Bond is intended to conform to all applicable statutory requirements. Any applicable requirement of any applicable statute that has been omitted from this Bond shall be deemed to be included herein as if set forth at length. If any provision of this Bond conflicts with any applicable statute, then the provision of said statute shall govern and the remainder of this Bond that is not in conflict therewith shall continue in full force and effect.

11. The term "Bid" as used herein includes a Bid, offer or proposal as applicable.

PERFORMANCE BOND

Any singular reference to Contractor, Surety, Owner or other party shall be considered plural where applicable.

CONTRACTOR (Name and Address):

SURETY (Name and Address of Principal Place
of Business):

OWNER (Name and Address):

CITY OF MURFREESBORO

PARKS AND RECREATION

111 W. VINE STREET

MURFREESBORO, TN 37130

CONTRACT

Date:

Amount:

Description (Name and Location):

The project includes improvements to the 2 existing concessions buildings at the Barfield Crescent Park in Murfreesboro, TN. The work includes the addition of HVAC systems, duct work and all electrical requirements, concrete and fencing on the exterior of the buildings, the installation of air curtains, the installation of a grill and hood, and the installation of a grease removal system as shown on the plans and listed in the contract documents.

BOND

Date (Not earlier than Contract Date):

Amount:

Modifications to this Bond Form: NONE

Surety and Contractor, intending to be legally bound hereby, subject to the terms printed on the reverse side hereof, do each cause this Performance Bond to be duly executed on its behalf by its authorized officer, agent or representative.

CONTRACTOR AS PRINCIPAL

Company: (Corp. Seal)

SURETY

Company: (Corp. Seal)

Signature: _____

Name and Title:

Signature: _____

Name and Title:

(Attach Power of Attorney)

(Space is provided below for signatures of additional parties, if required.)

CONTRACTOR AS PRINCIPAL

Company: (Corp. Seal)

SURETY

Company: (Corp. Seal)

Signature: _____

Name and Title:

Signature: _____

Name and Title:

1. The CONTRACTOR and the Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to the Owner for the performance of the Contract, which is incorporated herein by reference.

2. If the CONTRACTOR performs the Contract, the Surety and the CONTRACTOR have no obligation under this Bond, except to participate in conferences as provided in paragraph 3.1.

3. If there is no OWNER Default, the Surety's obligation under this Bond shall arise after:

3.1. The OWNER has notified the CONTRACTOR and the Surety at the addresses described in paragraph 10 below, that the OWNER is considering declaring a CONTRACTOR Default and has requested and attempted to arrange a conference with the CONTRACTOR and the Surety to be held not later than fifteen days after receipt of such notice to discuss methods of performing the Contract. If the OWNER, the CONTRACTOR and the Surety agree, the CONTRACTOR shall be allowed a reasonable time to perform the Contract, but such an agreement shall not waive the OWNER's right, if any, subsequently to declare a CONTRACTOR Default; and

3.2. The OWNER has declared a CONTRACTOR Default and formally terminated the CONTRACTOR's right to complete the Contract. Such CONTRACTOR Default shall not be declared earlier than twenty days after the CONTRACTOR and the Surety have received notice as provided in paragraph 3.1; and

3.3. The OWNER has agreed to pay the Balance of the Contract Price to:

3.3.1. The Surety in accordance with the terms of the Contract;

3.3.2. Another contractor selected pursuant to paragraph 4.3 to perform the Contract.

4. When the OWNER has satisfied the conditions of paragraph 3, the Surety shall promptly and at the Surety's expense take one of the following actions:

4.1. Arrange for the CONTRACTOR, with consent of the OWNER, to perform and complete the Contract; or

4.2. Undertake to perform and complete the Contract itself, through its agents or through independent contractors; or

4.3. Obtain bids or negotiated proposals from qualified contractors acceptable to the OWNER for a contract for performance and completion of the Contract, arrange for a contract to be prepared for execution by the OWNER and the contractor selected with the OWNER's concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the Bonds issued on the Contract, and pay to the OWNER the amount of damages as described in paragraph 6 in excess of the Balance of the Contract Price incurred by the OWNER resulting from the CONTRACTOR Default; or

4.4. Waive its right to perform and complete, arrange for completion, or obtain a new contractor and with reasonable promptness under the circumstances;

4.4.1 After investigation, determine the amount for which it may be liable to the OWNER and, as soon as practicable after the amount is determined, tender payment therefor to the OWNER; or

4.4.2 Deny liability in whole or in part and notify the OWNER citing reasons therefor.

5. If the Surety does not proceed as provided in paragraph 4 with reasonable promptness, the Surety shall be deemed to be in default on this Bond fifteen days after receipt of an additional written notice from the OWNER to the Surety demanding that the Surety perform its obligations under this Bond, and the OWNER shall be entitled to enforce any remedy available to the OWNER. If the Surety proceeds as provided in paragraph 4.4, and the OWNER refuses the payment tendered or the Surety has denied liability, in whole or in part, without further notice the OWNER shall be entitled to enforce any remedy available to the OWNER.

6. After the OWNER has terminated the CONTRACTOR's right to complete the Contract, and if the Surety elects to act under paragraph 4.1, 4.2, or 4.3 above, then the responsibilities of the Surety to the OWNER shall not be greater than those of the CONTRACTOR under the Contract, and the responsibilities of the OWNER to the Surety shall not be greater than those of the OWNER under the Contract. To a limit of the amount of this Bond, but subject to commitment by the OWNER of the Balance of the Contract Price to mitigation of costs and damages on the Contract, the Surety is obligated without duplication for:

6.1. The responsibilities of the CONTRACTOR for correction of defective Work and completion of the Contract;

6.2. Additional legal, design professional and delay costs resulting from the CONTRACTOR's Default, and resulting from the actions or failure to act of the Surety under paragraph 4; and

6.3. Liquidated damages, or if no liquidated damages are specified in the Contract, actual damages caused by delayed performance or non-performance of the CONTRACTOR.

7. The Surety shall not be liable to the OWNER or others for obligations of the CONTRACTOR that are unrelated to the Contract, and the Balance of the Contract Price shall not be reduced or set off on account of any such unrelated obligations. No right of action shall accrue on this Bond to any person or entity other than the OWNER or its heirs, executors, administrators, or successors.

8. The Surety hereby waives notice of any change, including changes of time, to the Contract or to related subcontracts, purchase orders and other obligations.

9. Any proceeding, legal or equitable, under this Bond may be instituted in any court of competent jurisdiction in the location in which the Work or part of the Work is located and shall be instituted within two years after CONTRACTOR Default or within two years after the CONTRACTOR ceased working or within two years after the Surety refuses or fails to perform its obligations

under this Bond, whichever occurs first. If the provisions of this paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

10. Notice to the Surety, the OWNER or the CONTRACTOR shall be mailed or delivered to the address shown on the signature page.

11. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the Contract was performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted here from and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. The intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

12. Definitions.

12.1 Balance of the Contract Price: The total amount payable by the OWNER to the CONTRACTOR under the Contract after all proper adjustments have been made, including allowance to the CONTRACTOR of any amounts received or to be received by the OWNER in settlement of insurance or other Claims for damages to which the CONTRACTOR is entitled, reduced by all valid and proper payments made to or on behalf of the CONTRACTOR under the Contract.

12.2. Contract: The agreement between the OWNER and the CONTRACTOR identified on the signature page, including all Contract Documents and changes thereto.

12.3. CONTRACTOR Default: Failure of the CONTRACTOR, which has neither been remedied nor waived, to perform or otherwise to comply with the terms of the Contract.

12.4. OWNER Default: Failure of the OWNER, which has neither been remedied nor waived, to pay the CONTRACTOR as required by the Contract or to perform and complete or comply with the other terms thereof.

(FOR INFORMATION ONLY—Name, Address and Telephone)

AGENT or BROKER: OWNER'S REPRESENTATIVE (Engineer or other party):

PAYMENT BOND

Any singular reference to Contractor, Surety, Owner or other party shall be considered plural where applicable.

CONTRACTOR (Name and Address):

SURETY (Name and Address of Principal Place
of Business):

OWNER (Name and Address):

CITY OF MURFREESBORO
PARKS AND RECREATION
111 WEST VINE STREET
MURFREESBORO, TN 37130

CONTRACT

Date:

Amount:

Description (Name and Location):

The project includes improvements to the 2 existing concessions buildings at the Barfield Crescent Park in Murfreesboro, TN. The work includes the addition of HVAC systems, duct work and all electrical requirements, concrete and fencing on the exterior of the buildings, the installation of air curtains, the installation of a grill and hood, and the installation of a grease removal system as shown on the plans and listed in the contract documents.

BOND

Date (Not earlier than Contract Date):

Amount:

Modifications to this Bond Form: NONE

Surety and Contractor, intending to be legally bound hereby, subject to the terms printed on the reverse side hereof, do each cause this Payment Bond to be duly executed on its behalf by its authorized officer, agent, or representative.

CONTRACTOR AS PRINCIPAL

Company: (Corp. Seal)

Signature: _____

Name and Title:

SURETY

Company: (Corp. Seal)

Signature: _____

Name and Title:

(Attach Power of Attorney)

(Space is provided below for signatures of additional parties, if required.)

CONTRACTOR AS PRINCIPAL

Company: (Corp. Seal)

Signature: _____

Name and Title:

SURETY

Company: (Corp. Seal)

Signature: _____

Name and Title:

EJCDC No. 1910-28-B (1996 Edition)

Originally prepared through the joint efforts of the Surety Association of America, Engineers Joint Contract Documents Committee, the Associated General Contractors of America, the American Institute of Architects, the American Subcontractors Association, and the Associated Specialty Contractors.

1. The CONTRACTOR and the Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to the OWNER to pay for labor, materials and equipment furnished for use in the performance of the Contract, which is incorporated herein by reference.

2. With respect to the OWNER, this obligation shall be null and void if the CONTRACTOR:

2.1. Promptly makes payment, directly or indirectly, for all sums due Claimants, and

2.2. Defends, indemnifies and holds harmless the OWNER from all claims, demands, liens or suits by any person or entity who furnished labor, materials or equipment for use in the performance of the Contract, provided the OWNER has promptly notified the CONTRACTOR and the Surety (at the addresses described in paragraph 12) of any claims, demands, liens or suits and tendered defense of such claims, demands, liens or suits to the CONTRACTOR and the Surety, and provided there is no OWNER Default.

3. With respect to Claimants, this obligation shall be null and void if the CONTRACTOR promptly makes payment, directly or indirectly, for all sums due.

4. The Surety shall have no obligation to Claimants under this Bond until:

4.1. Claimants who are employed by or have a direct contract with the CONTRACTOR have given notice to the Surety (at the addresses described in paragraph 12) and sent a copy, or notice thereof, to the OWNER, stating that a claim is being made under this Bond and, with substantial accuracy, the amount of the claim.

4.2. Claimants who do not have a direct contract with the CONTRACTOR:

1. Have furnished written notice to the CONTRACTOR and sent a copy, or notice thereof, to the OWNER, within 90 days after having last performed labor or last furnished materials or equipment included in the claim stating, with substantial accuracy, the amount of the claim and the name of the party to whom the materials

were furnished or supplied or for whom the labor was done or performed; and

2. Have either received a rejection in whole or in part from the CONTRACTOR, or not received within 30 days of furnishing the above notice any communication from the CONTRACTOR by which the CONTRACTOR had indicated the claim will be paid directly or indirectly; and

3. Not having been paid within the above 30 days, have sent a written notice to the Surety and sent a copy, or notice thereof, to the OWNER, stating that a claim is being made under this Bond and enclosing a copy of the previous written notice furnished to the CONTRACTOR.

5. If a notice required by paragraph 4 is given by the OWNER to the CONTRACTOR or to the Surety, that is sufficient compliance.

6. When the Claimant has satisfied the conditions of paragraph 4, the Surety shall promptly and at the Surety's expense take the following actions:

6.1. Send an answer to the Claimant, with a copy to the OWNER, within 45 days after receipt of the claim, stating the amounts that are undisputed and the basis for challenging any amounts that are disputed.

6.2. Pay or arrange for payment of any undisputed amounts.

7. The Surety's total obligation shall not exceed the amount of this Bond, and the amount of this Bond shall be credited for any payments made in good faith by the Surety.

8. Amounts owed by the OWNER to the CONTRACTOR under the Contract shall be used for the performance of the Contract and to satisfy claims, if any, under any Performance Bond. By the CONTRACTOR furnishing and the OWNER accepting this Bond, they agree that all funds earned by the CONTRACTOR in the performance of the Contract are dedicated to satisfy obligations of the CONTRACTOR and the Surety under this Bond, subject to the OWNER's priority to use the funds for the completion of the Work.

9. The Surety shall not be liable to the OWNER, Claimants or others for obligations of the CONTRACTOR that are unrelated to the Contract. The OWNER shall not be liable for payment of any costs or expenses of any Claimant under this Bond, and shall have under this Bond no obligations to make payments to, give notices on behalf of, or otherwise have obligations to Claimants under this Bond.

10. The Surety hereby waives notice of any change, including changes of time, to the Contract or to related Subcontracts, purchase orders and other obligations.

11. No suit or action shall be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the location in which the Work or part of the Work is located or after the expiration of one year from the date (1) on which the Claimant gave the notice required by paragraph 4.1 or paragraph 4.2.3, or (2) on which the last labor or service was performed by anyone or the last materials or equipment were furnished by anyone under the Construction Contract, whichever of (1) or (2) first occurs. If the provisions of this paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

12. Notice to the Surety, the OWNER or the CONTRACTOR shall be mailed or delivered to the addresses shown on the signature page. Actual receipt of notice by Surety, the OWNER or the CONTRACTOR, however accomplished, shall be sufficient compliance as of the date received at the address shown on the signature page.

13. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the Contract was to be performed, any provision in this

Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. The intent is, that this Bond shall be construed as a statutory Bond and not as a common law bond.

14. Upon request of any person or entity appearing to be a potential beneficiary of this Bond, the CONTRACTOR shall promptly furnish a copy of this Bond or shall permit a copy to be made.

15. DEFINITIONS

15.1. Claimant: An individual or entity having a direct contract with the CONTRACTOR or with a Subcontractor of the CONTRACTOR to furnish labor, materials or equipment for use in the performance of the Contract. The intent of this Bond shall be to include without limitation in the terms "labor, materials or equipment" that part of water, gas, power, light, heat, oil, gasoline, telephone service or rental equipment used in the Contract, architectural and engineering services required for performance of the Work of the CONTRACTOR and the CONTRACTOR's Subcontractors, and all other items for which a mechanic's lien may be asserted in the jurisdiction where the labor, materials or equipment were furnished.

15.2. Contract: The agreement between the OWNER and the CONTRACTOR identified on the signature page, including all Contract Documents and changes thereto.

15.3. OWNER Default: Failure of the OWNER, which has neither been remedied nor waived, to pay the CONTRACTOR as required by the Contract or to perform and complete or comply with the other terms thereof.

(FOR INFORMATION ONLY--Name, Address and Telephone)

AGENCY or BROKER: OWNER'S REPRESENTATIVE (Engineer or other party):

NOTICE TO PROCEED

DATE: TBD

TO: CONTRACTOR

FROM: Murfreesboro Parks and Recreation Department
City Hall
111 West Vine Street
Murfreesboro, TN 37130

PROJECT: Barfield Crescent Park HVAC Improvements

You are hereby notified to commence WORK in accordance with the Agreement dated the _____ on or before _____. Contractor agrees that the Work will be substantially complete within 45 calendar days, and completed and ready for final payment in within 60 calendar days. The date of substantial completion is there for _____ and the date of completion of all WORK is therefore _____.

Owner: City of Murfreesboro, TN

By: _____
Lanny Goodwin, Parks and Recreation Director

**EJCDC
STANDARD FORM OF AGREEMENT
BETWEEN OWNER AND CONTRACTOR
ON THE BASIS OF A STIPULATED PRICE**

THIS AGREEMENT is by and between City of Murfreesboro, TN
(hereinafter called OWNER) and _____
(hereinafter called CONTRACTOR).

OWNER and CONTRACTOR, in consideration of the mutual covenants hereinafter set forth, agree as follows:

The project includes improvements to the 2 existing concessions buildings at the Barfield Crescent Park in Murfreesboro, TN. The work includes the addition of HVAC systems, duct work and all electrical requirements, concrete and fencing on the exterior of the buildings, the installation of air curtains, the installation of a grill and hood, and the installation of a grease removal system as shown on the plans and listed in the contract documents.

ARTICLE 1 - WORK

1.01 CONTRACTOR shall complete all Work as specified or indicated in the Contract Documents. The Work is generally described as follows:

The project includes improvements to the 2 existing concessions buildings at the Barfield Crescent Park in Murfreesboro, TN. The work includes the addition of HVAC systems, duct work and all electrical requirements, concrete and fencing on the exterior of the buildings, the installation of air curtains, the installation of a grill and hood, and the installation of a grease removal system as shown on the plans and listed in the contract documents.

ARTICLE 2 - THE PROJECT

2.01 The Project for which the Work under the Contract Documents may be the whole or only a part is generally described as follows:

The project includes improvements to the 2 existing concessions buildings at the Barfield Crescent Park in Murfreesboro, TN. The work includes the addition of HVAC systems, duct work and all electrical requirements, concrete and fencing on the exterior of the buildings, the installation of air curtains, the installation of a grill and hood, and the installation of a grease removal system as shown on the plans and listed in the contract documents.

ARTICLE 3 - ENGINEER

3.01 The Project has been designed by

Wiser Consultants, LLC
1427 Kensington Square Court
Murfreesboro, TN 37130

who is hereinafter called ENGINEER and who is to act as OWNER's representative, assume all duties and responsibilities, and have the rights and authority assigned to ENGINEER in the Contract Documents in connection with the completion of the Work in accordance with the Contract Documents.

ARTICLE 4 - CONTRACT TIMES

4.01 *Time of the Essence*

A. All time limits for Milestones, if any, Substantial Completion, and completion and readiness for final payment as stated in the Contract Documents are of the essence of the Contract.

4.02 *Days to Achieve **Milestones**, Substantial Completion and Final Payment*

Number of days listed in Section A, are calendar days, not work days, and include projected rain days and holidays.

A. **Milestone #1** shall consist of the installation of the HVAC Systems in each building including all electrical requirements and shall be completed within 15 calendar days. **Milestone #2** shall consist of all the Work being substantially complete within 45 calendar days after the date when the Contract Times commence to run as provided in paragraph 2.03 of the General Conditions, and completed and ready for final payment in accordance with paragraph 14.07.B of the General Conditions within 60 calendar days after the date when the Contract Times commence to run.

4.03 *Liquidated Damages and Other Consequences for Failure*

- A. CONTRACTOR and OWNER recognize that time is of the essence of this Agreement and that OWNER will suffer financial loss if the Work is not completed within the times specified in paragraph 14.02 above, plus any extensions thereof allowed in accordance with Article 12 of the General Conditions. The parties also recognize the delays, expense, and difficulties involved in proving in a legal or arbitration proceeding the actual loss suffered by OWNER if the Work is not completed on time. Accordingly, instead of requiring any such proof, OWNER and CONTRACTOR agree that as liquidated damages for delay (but not as a penalty), CONTRACTOR shall pay OWNER \$ 250 for each day that expires after the time specified in paragraph 4.02 for Substantial Completion up to 15 days past contract expiration. After 15 days, CONTRACTOR shall pay OWNER \$ 250 for each day past until the Work is substantially complete. After Substantial Completion, if CONTRACTOR shall neglect, refuse, or fail to complete the remaining Work within the Contract Time or any proper extension thereof granted by OWNER, CONTRACTOR shall pay OWNER \$ 250 for each day that expires after the time specified in paragraph 4.02 for completion and readiness for final payment until the Work is completed and ready for final payment.
- B. CONTRACTOR shall have 24 hours to notify OWNER if CONTRACTOR fails to complete work associated with milestones listed in Section 4.02. OWNER may notify CONTRACTORS bonding company if CONTRACTOR fails to justify the delays in reaching a milestone date.
- C. Payment Applications, submitted by CONTRACTOR, shall not be processed by ENGINEER until work associated with milestones is substantially complete.
- D. CONTRACTOR shall pay OWNER for cost related to additional project management if CONTRACTOR fails to meet milestones as listed in Section 4.02.

- E. Failure of CONTRACTOR to meet milestones listed in Section 4.02 will jeopardize future work for the City of Murfreesboro and delays resulting from CONTRACTOR performance will be reported to the Murfreesboro City Council.

ARTICLE 5 - CONTRACT PRICE

5.01 OWNER shall pay CONTRACTOR for completion of the Work in accordance with the Contract Documents an amount in current funds equal to the sum of the amounts determined pursuant to paragraphs 5.01.A:

- A. For all Work, at the prices stated in CONTRACTOR's Bid, attached hereto as an exhibit.

ARTICLE 6 - PAYMENT PROCEDURES

6.01 *Submittal and Processing of Payments*

A. CONTRACTOR shall submit Applications for Payment in accordance with Article 14 of the General Conditions. Applications for Payment will be processed by ENGINEER as provided in the General Conditions.

6.02 *Progress Payments; Retainage*

A. OWNER shall make progress payments on account of the Contract Price on the basis of CONTRACTOR's Applications for Payment on or about the 15th day of each month during performance of the Work as provided in paragraphs 6.02.A.1 and 6.02.A.2 below and 4.03.C above. All such payments will be measured by the schedule of values established in paragraph 2.07.A of the General Conditions (and in the case of Unit Price Work based on the number of units completed) or, in the event there is no schedule of values, as provided in the General Requirements:

1. Prior to Substantial Completion, progress payments will be made in an amount equal to the percentage indicated below but, in each case, less the aggregate of payments previously made and less such amounts as ENGINEER may determine or OWNER may withhold, in accordance with paragraph 14.02 of the General Conditions:

a. 95 % of Work completed (with the balance being retainage). If the Work has been 50% completed as determined by ENGINEER, and if the character and progress of the Work have been satisfactory to OWNER and ENGINEER, OWNER, on recommendation of ENGINEER, may determine that as long as the character and progress of the Work remain satisfactory to them, there will be no retainage on account of Work subsequently completed, in which case the remaining progress payments prior to Substantial Completion will be in an amount equal to 100% of the Work completed less the aggregate of payments previously made; and

b. 95 % of cost of materials and equipment not incorporated in the Work (with the balance being retainage).

2. Upon Substantial Completion, OWNER shall pay an amount sufficient to increase total payments to CONTRACTOR to 95 % of the Work completed, less such amounts as ENGINEER shall determine in accordance with paragraph 14.02.B.5 of the General Conditions and less

100 % of ENGINEER's estimate of the value of Work to be completed or corrected as shown on the tentative list of items to be completed or corrected attached to the certificate of Substantial Completion.

6.03 *Final Payment*

A. Upon final completion and acceptance of the Work in accordance with paragraph 14.07 of the General Conditions, OWNER shall pay the remainder of the Contract Price as recommended by ENGINEER as provided in said paragraph 14.07.

ARTICLE 7 - INTEREST

7.01 All moneys not paid when due as provided in Article 14 of the General Conditions shall bear interest at the rate of 3 % per annum.

ARTICLE 8 - CONTRACTOR'S REPRESENTATIONS

8.01 In order to induce OWNER to enter into this Agreement CONTRACTOR makes the following representations:

A. CONTRACTOR has examined and carefully studied the Contract Documents and the other related data identified in the Bidding Documents.

B. CONTRACTOR has visited the Site and become familiar with and is satisfied as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.

C. CONTRACTOR is familiar with and is satisfied as to all federal, state, and local Laws and Regulations that may affect cost, progress, and performance of the Work.

D. CONTRACTOR has obtained and carefully studied (or assumes responsibility for having done so) all examinations, investigations, explorations, tests, studies, and data concerning conditions (surface, subsurface, and Underground Facilities) at or contiguous to the Site which may affect cost, progress, or performance of the Work or which relate to any aspect of the means, methods, techniques, sequences, and procedures of construction to be employed by CONTRACTOR, including applying the specific means, methods, techniques, sequences, and procedures of construction, if any, expressly required by the Contract Documents to be employed by CONTRACTOR, and safety precautions and programs incident thereto

E. CONTRACTOR does not consider that any further examinations, investigations, explorations, tests, studies, or data are necessary for the performance of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract Documents.

F. CONTRACTOR is aware of the general nature of work to be performed by OWNER and others at the Site that relates to the Work as indicated in the Contract Documents.

G. CONTRACTOR has correlated the information known to CONTRACTOR, information and observations obtained from visits to the Site, reports and drawings identified in the Contract Documents,

and all additional examinations, investigations, explorations, tests, studies, and data with the Contract Documents.

H. CONTRACTOR has given ENGINEER written notice of all conflicts, errors, ambiguities, or discrepancies that CONTRACTOR has discovered in the Contract Documents, and the written resolution thereof by ENGINEER is acceptable to CONTRACTOR.

I. The Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.

ARTICLE 9 - CONTRACT DOCUMENTS

9.01 *Contents*

A. The Contract Documents consist of the following:

1. This Agreement;
2. Performance/Payment Bond;
3. General Conditions;
4. Supplementary Conditions;
5. Specifications as listed in the table of contents of the Project Manual;
6. Drawings consisting of a cover sheet, plan sheets, notes and details with the following general title: **BARFIELD CRESCENT PARK HVAC IMPROVEMENTS**;
7. Addenda (numbers ____ to ____, inclusive);
8. Exhibits to this Agreement (enumerated as follows):
 - a. Notice to Proceed;
 - b. CONTRACTOR's Bid / PROPOSAL;
 - c. Documentation submitted by CONTRACTOR prior to Notice of Award;
9. The following which may be delivered or issued on or after the Effective Date of the Agreement and are not attached hereto:
 - a. Written Amendments;
 - b. Work Change Directives;
 - c. Change Order(s).

- B. The documents listed in paragraph 9.01.A are attached to this Agreement (except as expressly noted otherwise above).
- C. There are no Contract Documents other than those listed above in this Article 9.
- D. The Contract Documents may only be amended, modified, or supplemented as provided in paragraph 3.05 of the General Conditions.

ARTICLE 10 - MISCELLANEOUS

10.01 *Terms*

- A. Terms used in this Agreement will have the meanings indicated in the General Conditions.

10.02 *Assignment of Contract*

A. No assignment by a party hereto of any rights under or interests in the Contract will be binding on another party hereto without the written consent of the party sought to be bound; and, specifically but without limitation, moneys that may become due and moneys that are due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by law), and unless specifically stated to the contrary in any written consent to an assignment, no assignment will release or discharge the assignor from any duty or responsibility under the Contract Documents.

10.03 *Successors and Assigns*

A. OWNER and CONTRACTOR each binds itself, its partners, successors, assigns, and legal representatives to the other party hereto, its partners, successors, assigns, and legal representatives in respect to all covenants, agreements, and obligations contained in the Contract Documents.

10.04 *Severability*

A. Any provision or part of the Contract Documents held to be void or unenforceable under any Law or Regulation shall be deemed stricken, and all remaining provisions shall continue to be valid and binding upon OWNER and CONTRACTOR, who agree that the Contract Documents shall be reformed to replace such stricken provision or part thereof with a valid and enforceable provision that comes as close as possible to expressing the intention of the stricken provision.

IN WITNESS WHEREOF, OWNER and CONTRACTOR have signed this Agreement in duplicate. One counterpart each has been delivered to OWNER and CONTRACTOR. All portions of the Contract Documents have been signed or identified by OWNER and CONTRACTOR or on their behalf.

This Agreement will be effective on _____, _____ (which is the Effective Date of the Agreement).

OWNER:

CONTRACTOR:

City of Murfreesboro, TN

By: _____

By: _____

Attest:

Attest:

Approved as to form
City Attorney

[CORPORATE SEAL]

Address for giving notices:

Address for giving notices:

City of Murfreesboro, Parks and Recreation
111 West Vine Street
Murfreesboro, Tennessee 37130

License No. _____
(Where applicable)

Agent for service of process: _____

(If CONTRACTOR is a corporation or a partnership, attach evidence of authority to sign.)

Designated Representative:

Designated Representative:

Name: Lanny Goodwin
Title: Park and Recreation Director
Address: 111 West Vine Street
Murfreesboro, TN 37130
Phone: 615-893-5210
Facsimile: _____

Name: _____
Title: _____
Address: _____

Phone: _____
Facsimile: _____

This document has important legal consequences; consultation with an attorney is encouraged with respect to its use or modification. This document should be adapted to the particular circumstances of the contemplated Project and the Controlling Law.

STANDARD
GENERAL CONDITIONS
OF THE
CONSTRUCTION CONTRACT

Prepared by

ENGINEERS JOINT CONTRACT DOCUMENTS COMMITTEE

and

Issued and Published Jointly By

[INSERT LOGOS]

PROFESSIONAL ENGINEERS IN PRIVATE PRACTICE
a practice division of the
NATIONAL SOCIETY OF PROFESSIONAL ENGINEERS

AMERICAN CONSULTING ENGINEERS COUNCIL

AMERICAN SOCIETY OF CIVIL ENGINEERS

This document has been approved and endorsed by

The Associated General [seal] Contractors of America

Construction Specifications Institute

[seal]

These General Conditions have been prepared for use with the Owner-Contractor Agreements (No. 1910-8-A-1 or 1910-8-A-2) (1996 Editions). Their provisions are interrelated and a change in one may necessitate a change in the other. Comments concerning their usage are contained in the EJCDC User's Guide (No. 1910-50). For guidance in the preparation of Supplementary Conditions, see Guide to the Preparation of Supplementary Conditions (No. 1910-17) (1996 Edition).

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National Society of Professional Engineers
1420 King Street, Alexandria, VA 22314

American Consulting Engineers Council
1015 15th Street N.W., Washington, DC 20005

American Society of Civil Engineers
345 East 47th Street, New York, NY 10017

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GENERAL CONDITIONS

ARTICLE 1 - DEFINITIONS AND TERMINOLOGY

1.01 *Defined Terms*

A. Wherever used in the Contract Documents and printed with initial or all capital letters, the terms listed below will have the meanings indicated which are applicable to both the singular and plural thereof.

1. *Addenda*--Written or graphic instruments issued prior to the opening of Bids which clarify, correct, or change the Bidding Requirements or the Contract Documents.

2. *Agreement*--The written instrument which is evidence of the agreement between OWNER and CONTRACTOR covering the Work.

3. *Application for Payment*--The form acceptable to ENGINEER which is to be used by CONTRACTOR during the course of the Work in requesting progress or final payments and which is to be accompanied by such supporting documentation as is required by the Contract Documents.

4. *Asbestos*--Any material that contains more than one percent asbestos and is friable or is releasing asbestos fibers into the air above current action levels established by the United States Occupational Safety and Health Administration.

5. *Bid*--The offer or proposal of a bidder submitted on the prescribed form setting forth the prices for the Work to be performed.

6. *Bidding Documents*--The Bidding Requirements and the proposed Contract Documents (including all Addenda issued prior to receipt of Bids).

7. *Bidding Requirements*--The Advertisement or Invitation to Bid, Instructions to Bidders, Bid security form, if any, and the Bid form with any supplements.

8. *Bonds*--Performance and payment bonds and other instruments of security.

9. *Change Order*--A document recommended by ENGINEER which is signed by CONTRACTOR and OWNER and authorizes an addition, deletion, or revision in the Work or an adjustment in the Contract Price or the Contract Times, issued on or after the Effective Date of the Agreement.

10. *Claim*--A demand or assertion by OWNER or CONTRACTOR seeking an adjustment of Contract Price or Contract Times, or both, or other relief with respect to the terms of the Contract. A demand for money or services by a third party is not a Claim.

11. *Contract*--The entire and integrated written agreement between the OWNER and CONTRACTOR concerning the Work. The Contract supersedes prior negotiations, representations, or agreements, whether written or oral.

12. *Contract Documents*--The Contract Documents establish the rights and obligations of the parties and include the Agreement, Addenda (which pertain to the Contract Documents), CONTRACTOR's Bid (including documentation accompanying the Bid and any post Bid documentation submitted prior to the Notice of Award) when attached as an exhibit to the Agreement, the Notice to Proceed, the Bonds, these General Conditions, the Supplementary Conditions, the Specifications and the Drawings as the same are more specifically identified in the Agreement, together with all Written Amendments, Change Orders, Work Change Directives, Field Orders, and ENGINEER's written interpretations and clarifications issued on or after the Effective Date of the Agreement. Approved Shop Drawings and the reports and drawings of subsurface and physical conditions are not Contract Documents. Only printed or hard copies of the items listed in this paragraph are Contract Documents. Files in electronic media format of text, data, graphics, and

the like that may be furnished by OWNER to CONTRACTOR are not Contract Documents.

13. *Contract Price*--The moneys payable by OWNER to CONTRACTOR for completion of the Work in accordance with the Contract Documents as stated in the Agreement (subject to the provisions of paragraph 11.03 in the case of Unit Price Work).

14. *Contract Times*--The number of days or the dates stated in the Agreement to: (i) achieve Substantial Completion; and (ii) complete the Work so that it is ready for final payment as evidenced by ENGINEER's written recommendation of final payment.

15. *CONTRACTOR*--The individual or entity with whom OWNER has entered into the Agreement.

16. *Cost of the Work*--See paragraph 11.01.A for definition.

17. *Drawings*--That part of the Contract Documents prepared or approved by ENGINEER which graphically shows the scope, extent, and character of the Work to be performed by CONTRACTOR. Shop Drawings and other CONTRACTOR submittals are not Drawings as so defined.

18. *Effective Date of the Agreement*--The date indicated in the Agreement on which it becomes effective, but if no such date is indicated, it means the date on which the Agreement is signed and delivered by the last of the two parties to sign and deliver.

19. *ENGINEER*--The individual or entity named as such in the Agreement.

20. *ENGINEER's Consultant*--An individual or entity having a contract with ENGINEER to furnish services as ENGINEER's independent professional associate or consultant with respect to the Project and who is identified as such in the Supplementary Conditions.

21. *Field Order*--A written order issued by ENGINEER which requires minor changes in the Work but which does not involve a change in the Contract Price or the Contract Times.

22. *General Requirements*--Sections of Division 1 of the Specifications. The General Requirements pertain to all sections of the Specifications.

23. *Hazardous Environmental Condition*--The presence at the Site of Asbestos, PCBs, Petroleum, Hazardous Waste, or Radioactive Material in such quantities or circumstances that may present a substantial danger to persons or property exposed thereto in connection with the Work.

24. *Hazardous Waste*--The term Hazardous Waste shall have the meaning provided in Section 1004 of the Solid Waste Disposal Act (42 USC Section 6903) as amended from time to time.

25. *Laws and Regulations; Laws or Regulations*--Any and all applicable laws, rules,

regulations, ordinances, codes, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.

26. *Liens*--Charges, security interests, or encumbrances upon Project funds, real property, or personal property.

27. *Milestone*--A principal event specified in the Contract Documents relating to an intermediate completion date or time prior to Substantial Completion of all the Work.

28. *Notice of Award*--The written notice by OWNER to the apparent successful bidder stating that upon timely compliance by the apparent successful bidder with the conditions precedent listed therein, OWNER will sign and deliver the Agreement.

29. *Notice to Proceed*--A written notice given by OWNER to CONTRACTOR fixing the date on which the Contract Times will commence to run and on which CONTRACTOR shall start to perform the Work under the Contract Documents.

30. *OWNER*--The individual, entity, public body, or authority with whom CONTRACTOR has entered into the Agreement and for whom the Work is to be performed.

31. *Partial Utilization*--Use by OWNER of a substantially completed part of the Work for the purpose for which it is intended (or a related purpose) prior to Substantial Completion of all the Work.

32. *PCBs*--Polychlorinated biphenyls.

33. *Petroleum*--Petroleum, including crude oil or any fraction thereof which is liquid at standard conditions of temperature and pressure (60 degrees Fahrenheit and 14.7 pounds per square inch absolute), such as oil, petroleum, fuel oil, oil sludge, oil refuse, gasoline, kerosene, and oil mixed with other non-Hazardous Waste and crude oils.

34. *Project*--The total construction of which the Work to be performed under the

Contract Documents may be the whole, or a part as may be indicated elsewhere in the Contract Documents.

35. *Project Manual*--The bound documentary information prepared for bidding and constructing the Work. A listing of the contents of the Project Manual, which may be bound in one or more volumes, is contained in the table(s) of contents.

36. *Radioactive Material*--Source, special nuclear, or byproduct material as defined by the Atomic Energy Act of 1954 (42 USC Section 2011 et seq.) as amended from time to time.

37. *Resident Project Representative*--The authorized representative of ENGINEER who may be assigned to the Site or any part thereof.

38. *Samples*--Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and which establish the standards by which such portion of the Work will be judged.

39. *Shop Drawings*--All drawings, diagrams, illustrations, schedules, and other data or information which are specifically prepared or assembled by or for CONTRACTOR and submitted by CONTRACTOR to illustrate some portion of the Work.

40. *Site*--Lands or areas indicated in the Contract Documents as being furnished by OWNER upon which the Work is to be performed, including rights-of-way and easements for access thereto, and such other lands furnished by OWNER which are designated for the use of CONTRACTOR.

41. *Specifications*--That part of the Contract Documents consisting of written technical descriptions of materials, equipment, systems, standards, and workmanship as applied to the Work and certain administrative details applicable thereto.

42. *Subcontractor*--An individual or entity having a direct contract with CONTRACTOR or with

any other Subcontractor for the performance of a part of the Work at the Site.

43. *Substantial Completion*--The time at which the Work (or a specified part thereof) has progressed to the point where, in the opinion of ENGINEER, the Work (or a specified part thereof) is sufficiently complete, in accordance with the Contract Documents, so that the Work (or a specified part thereof) can be utilized for the purposes for which it is intended. The terms "substantially complete" and "substantially completed" as applied to all or part of the Work refer to Substantial Completion thereof.

44. *Supplementary Conditions*--That part of the Contract Documents which amends or supplements these General Conditions.

45. *Supplier*--A manufacturer, fabricator, supplier, distributor, materialman, or vendor having a direct contract with CONTRACTOR or with any Subcontractor to furnish materials or equipment to be incorporated in the Work by CONTRACTOR or any Subcontractor.

46. *Underground Facilities*--All underground pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or attachments, and any encasements containing such facilities, including those that convey electricity, gases, steam, liquid petroleum products, telephone or other communications, cable television, water, wastewater, storm water, other liquids or chemicals, or traffic or other control systems.

47. *Unit Price Work*--Work to be paid for on the basis of unit prices.

48. *Work*--The entire completed construction or the various separately identifiable parts thereof required to be provided under the Contract Documents. Work includes and is the result of performing or providing all labor, services, and documentation necessary to produce such construction, and furnishing, installing, and incorporating all materials and equipment into such

construction, all as required by the Contract Documents.

49. *Work Change Directive*--A written statement to CONTRACTOR issued on or after the Effective Date of the Agreement and signed by OWNER and recommended by ENGINEER ordering an addition, deletion, or revision in the Work, or responding to differing or unforeseen subsurface or physical conditions under which the Work is to be performed or to emergencies. A Work Change Directive will not change the Contract Price or the Contract Times but is evidence that the parties expect that the change ordered or documented by a Work Change Directive will be incorporated in a subsequently issued Change Order following negotiations by the parties as to its effect, if any, on the Contract Price or Contract Times.

50. *Written Amendment*--A written statement modifying the Contract Documents, signed by OWNER and CONTRACTOR on or after the Effective Date of the Agreement and normally dealing with the nonengineering or nontechnical rather than strictly construction-related aspects of the Contract Documents.

1.02 Terminology

A. Intent of Certain Terms or Adjectives

1. Whenever in the Contract Documents the terms "as allowed," "as approved," or terms of like effect or import are used, or the adjectives "reasonable," "suitable," "acceptable," "proper," "satisfactory," or adjectives of like effect or import are used to describe an action or determination of ENGINEER as to the Work, it is intended that such action or determination will be solely to evaluate, in general, the completed Work for compliance with the requirements of and information in the Contract Documents and conformance with the design concept of the completed Project as a functioning whole as shown or indicated in the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective shall not be effective to assign to

ENGINEER any duty or authority to supervise or direct the performance of the Work or any duty or authority to undertake responsibility contrary to the provisions of paragraph 9.10 or any other provision of the Contract Documents.

B. Day

1. The word "day" shall constitute a calendar day of 24 hours measured from midnight to the next midnight.

C. Defective

1. The word "defective," when modifying the word "Work," refers to Work that is unsatisfactory, faulty, or deficient in that it does not conform to the Contract Documents or does not meet the requirements of any inspection, reference standard, test, or approval referred to in the Contract Documents, or has been damaged prior to ENGINEER's recommendation of final payment (unless responsibility for the protection thereof has been assumed by OWNER at Substantial Completion in accordance with paragraph 14.04 or 14.05).

D. Furnish, Install, Perform, Provide

1. The word "furnish," when used in connection with services, materials, or equipment, shall mean to supply and deliver said services, materials, or equipment to the Site (or some other specified location) ready for use or installation and in usable or operable condition.

2. The word "install," when used in connection with services, materials, or equipment, shall mean to put into use or place in final position said services, materials, or equipment complete and ready for intended use.

3. The words "perform" or "provide," when used in connection with services, materials, or equipment, shall mean to furnish and install said services, materials, or

equipment complete and ready for intended use.

4. When "furnish," "install," "perform," or "provide" is not used in connection with services, materials, or equipment in a context clearly requiring an obligation of CONTRACTOR, "provide" is implied.

E. Unless stated otherwise in the Contract Documents, words or phrases which have a well-known technical or construction industry or trade meaning are used in the Contract Documents in accordance with such recognized meaning.

ARTICLE 2 - PRELIMINARY MATTERS

2.01 Delivery of Bonds

A. When CONTRACTOR delivers the executed Agreements to OWNER, CONTRACTOR shall also deliver to OWNER such Bonds as CONTRACTOR may be required to furnish.

2.02 Copies of Documents

A. OWNER shall furnish to CONTRACTOR up to ten copies of the Contract Documents. Additional copies will be furnished upon request at the cost of reproduction.

2.03 Commencement of Contract Times; Notice to Proceed

A. The Contract Times will commence to run on the thirtieth day after the Effective Date of the Agreement or, if a Notice to Proceed is given, on the day indicated in the Notice to Proceed. A Notice to Proceed may be given at any time within 30 days after the Effective Date of the Agreement. In no event will the Contract Times commence to run later than the sixtieth day after the day of Bid opening or the thirtieth day after the Effective Date of the Agreement, whichever date is earlier.

2.04 Starting the Work

A. CONTRACTOR shall start to perform the Work on the date when the Contract Times commence to run. No Work shall be done at the Site prior to the date on which the Contract Times commence to run.

2.05 *Before Starting Construction*

A. *CONTRACTOR's Review of Contract Documents:* Before undertaking each part of the Work, CONTRACTOR shall carefully study and compare the Contract Documents and check and verify pertinent figures therein and all applicable field measurements. CONTRACTOR shall promptly report in writing to ENGINEER any conflict, error, ambiguity, or discrepancy which CONTRACTOR may discover and shall obtain a written interpretation or clarification from ENGINEER before proceeding with any Work affected thereby; however, CONTRACTOR shall not be liable to OWNER or ENGINEER for failure to report any conflict, error, ambiguity, or discrepancy in the Contract Documents unless CONTRACTOR knew or reasonably should have known thereof.

B. *Preliminary Schedules:* Within ten days after the Effective Date of the Agreement (unless otherwise specified in the General Requirements), CONTRACTOR shall submit to ENGINEER for its timely review:

1. a preliminary progress schedule indicating the times (numbers of days or dates) for starting and completing the various stages of the Work, including any Milestones specified in the Contract Documents;

2. a preliminary schedule of Shop Drawing and Sample submittals which will list each required submittal and the times for submitting, reviewing, and processing such submittal; and

3. a preliminary schedule of values for all of the Work which includes quantities and prices of items which when added together equal the Contract Price and subdi-

vides the Work into component parts in sufficient detail to serve as the basis for progress payments during performance of the Work. Such prices will include an appropriate amount of overhead and profit applicable to each item of Work.

C. *Evidence of Insurance:* Before any Work at the Site is started, CONTRACTOR and OWNER shall each deliver to the other, with copies to each additional insured identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance which either of them or any additional insured may reasonably request) which CONTRACTOR and OWNER respectively are required to purchase and maintain in accordance with Article 5.

2.06 *Preconstruction Conference*

A. Within 20 days after the Contract Times start to run, but before any Work at the Site is started, a conference attended by CONTRACTOR, ENGINEER, and others as appropriate will be held to establish a working understanding among the parties as to the Work and to discuss the schedules referred to in paragraph 2.05.B, procedures for handling Shop Drawings and other submittals, processing Applications for Payment, and maintaining required records.

2.07 *Initial Acceptance of Schedules*

A. Unless otherwise provided in the Contract Documents, at least ten days before submission of the first Application for Payment a conference attended by CONTRACTOR, ENGINEER, and others as appropriate will be held to review for acceptability to ENGINEER as provided below the schedules submitted in accordance with paragraph 2.05.B. CONTRACTOR shall have an additional ten days to make corrections and adjustments and to complete and resubmit the schedules. No progress payment shall be made to CONTRACTOR until acceptable schedules are submitted to ENGINEER.

1. The progress schedule will be acceptable to ENGINEER if it provides an orderly progression of the Work to comple-

tion within any specified Milestones and the Contract Times. Such acceptance will not impose on ENGINEER responsibility for the progress schedule, for sequencing, scheduling, or progress of the Work nor interfere with or relieve CONTRACTOR from CONTRACTOR's full responsibility therefor.

2. CONTRACTOR's schedule of Shop Drawing and Sample submittals will be acceptable to ENGINEER if it provides a workable arrangement for reviewing and processing the required submittals.

3. CONTRACTOR's schedule of values will be acceptable to ENGINEER as to form and substance if it provides a reasonable allocation of the Contract Price to component parts of the Work.

ARTICLE 3 - CONTRACT DOCUMENTS: INTENT, AMENDING, REUSE

3.01 *Intent*

A. The Contract Documents are complementary; what is called for by one is as binding as if called for by all.

B. It is the intent of the Contract Documents to describe a functionally complete Project (or part thereof) to be constructed in accordance with the Contract Documents. Any labor, documentation, services, materials, or equipment that may reasonably be inferred from the Contract Documents or from prevailing custom or trade usage as being required to produce the intended result will be provided whether or not specifically called for at no additional cost to OWNER.

C. Clarifications and interpretations of the Contract Documents shall be issued by ENGINEER as provided in Article 9.

3.02 *Reference Standards*

A. *Standards, Specifications, Codes, Laws, and Regulations*

1. Reference to standards, specifications, manuals, or codes of any technical society, organization, or association, or to Laws or Regulations, whether such reference be specific or by implication, shall mean the standard, specification, manual, code, or Laws or Regulations in effect at the time of opening of Bids (or on the Effective Date of the Agreement if there were no Bids), except as may be otherwise specifically stated in the Contract Documents.

2. No provision of any such standard, specification, manual or code, or any instruction of a Supplier shall be effective to change the duties or responsibilities of OWNER, CONTRACTOR, or ENGINEER, or any of their subcontractors, consultants, agents, or employees from those set forth in the Contract Documents, nor shall any such provision or instruction be effective to assign to OWNER, ENGINEER, or any of ENGINEER's Consultants, agents, or employees any duty or authority to supervise or direct the performance of the Work or any duty or authority to undertake responsibility inconsistent with the provisions of the Contract Documents.

3.03 *Reporting and Resolving Discrepancies*

A. *Reporting Discrepancies*

1. If, during the performance of the Work, CONTRACTOR discovers any conflict, error, ambiguity, or discrepancy within the Contract Documents or between the Contract Documents and any provision of any Law or Regulation applicable to the performance of the Work or of any standard, specification, manual or code, or of any instruction of any Supplier, CONTRACTOR shall report it to ENGINEER in writing at once. CONTRACTOR shall not proceed with the Work affected thereby (except in an emergency as required by paragraph 6.16.A) until an amendment or supplement to the

Contract Documents has been issued by one of the methods indicated in paragraph 3.04; provided, however, that CONTRACTOR shall not be liable to OWNER or ENGINEER for failure to report any such conflict, error, ambiguity, or discrepancy unless CONTRACTOR knew or reasonably should have known thereof.

B. *Resolving Discrepancies*

1. Except as may be otherwise specifically stated in the Contract Documents, the provisions of the Contract Documents shall take precedence in resolving any conflict, error, ambiguity, or discrepancy between the provisions of the Contract Documents and:

a. the provisions of any standard, specification, manual, code, or instruction (whether or not specifically incorporated by reference in the Contract Documents); or

b. the provisions of any Laws or Regulations applicable to the performance of the Work (unless such an interpretation of the provisions of the Contract Documents would result in violation of such Law or Regulation).

3.04 *Amending and Supplementing Contract Documents*

A. The Contract Documents may be amended to provide for additions, deletions, and revisions in the Work or to modify the terms and conditions thereof in one or more of the following ways: (i) a Written Amendment; (ii) a Change Order; or (iii) a Work Change Directive.

B. The requirements of the Contract Documents may be supplemented, and minor variations and deviations in the Work may be authorized, by one or more of the following ways: (i) a Field Order; (ii) ENGINEER's approval of a Shop Drawing or Sample; or (iii) ENGINEER's written interpretation or clarification.

3.05 *Reuse of Documents*

A. CONTRACTOR and any Subcontractor or Supplier or other individual or entity performing or furnishing any of the Work under a direct or indirect contract with OWNER: (i) shall not have or acquire any title to or ownership rights in any of the Drawings, Specifications, or other documents (or copies of any thereof) prepared by or bearing the seal of ENGINEER or ENGINEER's Consultant, including electronic media editions; and (ii) shall not reuse any of such Drawings, Specifications, other documents, or copies thereof on extensions of the Project or any other project without written consent of OWNER and ENGINEER and specific written verification or adoption by ENGINEER. This prohibition will survive final payment, completion, and acceptance of the Work, or termination or completion of the Contract. Nothing herein shall preclude CONTRACTOR from retaining copies of the Contract Documents for record purposes.

ARTICLE 4 - AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL CONDITIONS; REFERENCE POINTS

4.01 *Availability of Lands*

A. OWNER shall furnish the Site. OWNER shall notify CONTRACTOR of any encumbrances or restrictions not of general application but specifically related to use of the Site with which CONTRACTOR must comply in performing the Work. OWNER will obtain in a timely manner and pay for easements for permanent structures or permanent changes in existing facilities. If CONTRACTOR and OWNER are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, as a result of any delay in OWNER's furnishing the Site, CONTRACTOR may make a Claim therefor as provided in paragraph 10.05.

B. Upon reasonable written request, OWNER shall furnish CONTRACTOR with a current statement of record legal title and legal description of the lands upon which the Work is to be performed and OWNER's interest therein as necessary

for giving notice of or filing a mechanic's or construction lien against such lands in accordance with applicable Laws and Regulations.

C. CONTRACTOR shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment.

4.02 *Subsurface and Physical Conditions*

A. *Reports and Drawings:* The Supplementary Conditions identify:

1. those reports of explorations and tests of subsurface conditions at or contiguous to the Site that ENGINEER has used in preparing the Contract Documents; and
2. those drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site (except Underground Facilities) that ENGINEER has used in preparing the Contract Documents.

B. *Limited Reliance by CONTRACTOR on Technical Data Authorized:* CONTRACTOR may rely upon the general accuracy of the "technical data" contained in such reports and drawings, but such reports and drawings are not Contract Documents. Such "technical data" is identified in the Supplementary Conditions. Except for such reliance on such "technical data," CONTRACTOR may not rely upon or make any Claim against OWNER, ENGINEER, or any of ENGINEER's Consultants with respect to:

1. the completeness of such reports and drawings for CONTRACTOR's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences, and procedures of construction to be employed by CONTRACTOR, and safety precautions and programs incident thereto; or

2. other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings; or

3. any CONTRACTOR interpretation of or conclusion drawn from any "technical data" or any such other data, interpretations, opinions, or information.

4.03 *Differing Subsurface or Physical Conditions*

A. *Notice:* If CONTRACTOR believes that any subsurface or physical condition at or contiguous to the Site that is uncovered or revealed either:

1. is of such a nature as to establish that any "technical data" on which CONTRACTOR is entitled to rely as provided in paragraph 4.02 is materially inaccurate; or
2. is of such a nature as to require a change in the Contract Documents; or
3. differs materially from that shown or indicated in the Contract Documents; or

4. is of an unusual nature, and differs materially from conditions ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract Documents;

then CONTRACTOR shall, promptly after becoming aware thereof and before further disturbing the subsurface or physical conditions or performing any Work in connection therewith (except in an emergency as required by paragraph 6.16.A), notify OWNER and ENGINEER in writing about such condition. CONTRACTOR shall not further disturb such condition or perform any Work in connection therewith (except as aforesaid) until receipt of written order to do so.

B. *ENGINEER's Review:* After receipt of written notice as required by paragraph 4.03.A, ENGINEER will promptly review the pertinent condition, determine the necessity of OWNER's obtaining additional exploration or tests with respect thereto, and advise OWNER in writing (with

a copy to CONTRACTOR) of ENGINEER's findings and conclusions.

C. Possible Price and Times Adjustments

1. The Contract Price or the Contract Times, or both, will be equitably adjusted to the extent that the existence of such differing subsurface or physical condition causes an increase or decrease in CONTRACTOR's cost of, or time required for, performance of the Work; subject, however, to the following:

a. such condition must meet any one or more of the categories described in paragraph 4.03.A; and

b. with respect to Work that is paid for on a Unit Price Basis, any adjustment in Contract Price will be subject to the provisions of paragraphs 9.08 and 11.03.

2. CONTRACTOR shall not be entitled to any adjustment in the Contract Price or Contract Times if:

a. CONTRACTOR knew of the existence of such conditions at the time CONTRACTOR made a final commitment to OWNER in respect of Contract Price and Contract Times by the submission of a Bid or becoming bound under a negotiated contract; or

b. the existence of such condition could reasonably have been discovered or revealed as a result of any examination, investigation, exploration, test, or study of the Site and contiguous areas required by the Bidding Requirements or Contract Documents to be conducted by or for CONTRACTOR prior to CONTRACTOR's making such final commitment; or

c. CONTRACTOR failed to give the written notice within the time and as required by paragraph 4.03.A.

3. If OWNER and CONTRACTOR are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, a Claim may be made therefor as provided in paragraph 10.05. However, OWNER, ENGINEER, and ENGINEER's Consultants shall not be liable to CONTRACTOR for any claims, costs, losses, or damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by CONTRACTOR on or in connection with any other project or anticipated project.

4.04 Underground Facilities

A. *Shown or Indicated:* The information and data shown or indicated in the Contract Documents with respect to existing Underground Facilities at or contiguous to the Site is based on information and data furnished to OWNER or ENGINEER by the owners of such Underground Facilities, including OWNER, or by others. Unless it is otherwise expressly provided in the Supplementary Conditions:

1. OWNER and ENGINEER shall not be responsible for the accuracy or completeness of any such information or data; and

2. the cost of all of the following will be included in the Contract Price, and CONTRACTOR shall have full responsibility for:

a. reviewing and checking all such information and data,

b. locating all Underground Facilities shown or indicated in the Contract Documents,

c. coordination of the Work with the owners of such Underground Facilities,

including OWNER, during construction, and

d. the safety and protection of all such Underground Facilities and repairing any damage thereto resulting from the Work.

B. *Not Shown or Indicated*

1. If an Underground Facility is uncovered or revealed at or contiguous to the Site which was not shown or indicated, or not shown or indicated with reasonable accuracy in the Contract Documents, CONTRACTOR shall, promptly after becoming aware thereof and before further disturbing conditions affected thereby or performing any Work in connection therewith (except in an emergency as required by paragraph 6.16.A), identify the owner of such Underground Facility and give written notice to that owner and to OWNER and ENGINEER. ENGINEER will promptly review the Underground Facility and determine the extent, if any, to which a change is required in the Contract Documents to reflect and document the consequences of the existence or location of the Underground Facility. During such time, CONTRACTOR shall be responsible for the safety and protection of such Underground Facility.

2. If ENGINEER concludes that a change in the Contract Documents is required, a Work Change Directive or a Change Order will be issued to reflect and document such consequences. An equitable adjustment shall be made in the Contract Price of Contract Times, or both, to the extent that they are attributable to the existence or location of any Underground Facility that was not shown or indicated or not shown or indicated with reasonable accuracy in the Contract Documents and that CONTRACTOR did not know of and could not reasonably have been expected to be aware of or to have anticipated. If OWNER and CONTRACTOR are unable to agree on

entitlement to or on the amount or extent, if any, of any such adjustment in Contract Price or Contract Times, OWNER or CONTRACTOR may make a Claim therefor as provided in paragraph 10.05.

4.05 *Reference Points*

A. OWNER shall provide engineering surveys to establish reference points for construction which in ENGINEER's judgment are necessary to enable CONTRACTOR to proceed with the Work. CONTRACTOR shall be responsible for laying out the Work, shall protect and preserve the established reference points and property monuments, and shall make no changes or relocations without the prior written approval of OWNER. CONTRACTOR shall report to ENGINEER whenever any reference point or property monument is lost or destroyed or requires relocation because of necessary changes in grades or locations, and shall be responsible for the accurate replacement or relocation of such reference points or property monuments by professionally qualified personnel.

4.06 *Hazardous Environmental Condition at Site*

A. *Reports and Drawings:* Reference is made to the Supplementary Conditions for the identification of those reports and drawings relating to a Hazardous Environmental Condition identified at the Site, if any, that have been utilized by the ENGINEER in the preparation of the Contract Documents.

B. *Limited Reliance by CONTRACTOR on Technical Data Authorized:* CONTRACTOR may rely upon the general accuracy of the "technical data" contained in such reports and drawings, but such reports and drawings are not Contract Documents. Such "technical data" is identified in the Supplementary Conditions. Except for such reliance on such "technical data," CONTRACTOR may not rely upon or make any Claim against OWNER, ENGINEER or any of ENGINEER's Consultants with respect to:

1. the completeness of such reports and drawings for CONTRACTOR's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences and procedures of construction to be employed by CONTRACTOR and safety precautions and programs incident thereto; or

2. other data, interpretations, opinions and information contained in such reports or shown or indicated in such drawings; or

3. any CONTRACTOR interpretation of or conclusion drawn from any "technical data" or any such other data, interpretations, opinions or information.

C. CONTRACTOR shall not be responsible for any Hazardous Environmental Condition uncovered or revealed at the Site which was not shown or indicated in Drawings or Specifications or identified in the Contract Documents to be within the scope of the Work. CONTRACTOR shall be responsible for a Hazardous Environmental Condition created with any materials brought to the Site by CONTRACTOR, Subcontractors, Suppliers, or anyone else for whom CONTRACTOR is responsible.

D. If CONTRACTOR encounters a Hazardous Environmental Condition or if CONTRACTOR or anyone for whom CONTRACTOR is responsible creates a Hazardous Environmental Condition, CONTRACTOR shall immediately: (i) secure or otherwise isolate such condition; (ii) stop all Work in connection with such condition and in any area affected thereby (except in an emergency as required by paragraph 6.16); and (iii) notify OWNER and ENGINEER (and promptly thereafter confirm such notice in writing). OWNER shall promptly consult with ENGINEER concerning the necessity for OWNER to retain a qualified expert to evaluate such condition or take corrective action, if any.

E. CONTRACTOR shall not be required to resume Work in connection with such condition or in any affected area until after OWNER has obtained any required permits related thereto and

delivered to CONTRACTOR written notice: (i) specifying that such condition and any affected area is or has been rendered safe for the resumption of Work; or (ii) specifying any special conditions under which such Work may be resumed safely. If OWNER and CONTRACTOR cannot agree as to entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times, or both, as a result of such Work stoppage or such special conditions under which Work is agreed to be resumed by CONTRACTOR, either party may make a Claim therefor as provided in paragraph 10.05.

F. If after receipt of such written notice CONTRACTOR does not agree to resume such Work based on a reasonable belief it is unsafe, or does not agree to resume such Work under such special conditions, then OWNER may order the portion of the Work that is in the area affected by such condition to be deleted from the Work. If OWNER and CONTRACTOR cannot agree as to entitlement to or on the amount or extent, if any, of an adjustment in Contract Price or Contract Times as a result of deleting such portion of the Work, then either party may make a Claim therefor as provided in paragraph 10.05. OWNER may have such deleted portion of the Work performed by OWNER's own forces or others in accordance with Article 7.

G. To the fullest extent permitted by Laws and Regulations, OWNER shall indemnify and hold harmless CONTRACTOR, Subcontractors, ENGINEER, ENGINEER's Consultants and the officers, directors, partners, employees, agents, other consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition, provided that such Hazardous Environmental Condition: (i) was not shown or indicated in the Drawings or Specifications or identified in the Contract Documents to be included within the scope of the Work, and (ii) was not created by CONTRACTOR or by anyone for whom CONTRACTOR is responsible. Nothing in this para-

graph 4.06.E shall obligate OWNER to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.

H. To the fullest extent permitted by Laws and Regulations, CONTRACTOR shall indemnify and hold harmless OWNER, ENGINEER, ENGINEER's Consultants, and the officers, directors, partners, employees, agents, other consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition created by CONTRACTOR or by anyone for whom CONTRACTOR is responsible. Nothing in this paragraph 4.06.F shall obligate CONTRACTOR to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.

I. The provisions of paragraphs 4.02, 4.03, and 4.04 are not intended to apply to a Hazardous Environmental Condition uncovered or revealed at the Site.

ARTICLE 5 - BONDS AND INSURANCE

5.01 *Performance, Payment, and Other Bonds*

A. CONTRACTOR shall furnish performance and payment Bonds, each in an amount at least equal to the Contract Price as security for the faithful performance and payment of all CONTRACTOR's obligations under the Contract Documents. These Bonds shall remain in effect at least until one year after the date when final payment becomes due, except as provided otherwise by Laws or Regulations or by the Contract Documents. CONTRACTOR shall also furnish such other Bonds as are required by the Contract Documents.

B. All Bonds shall be in the form prescribed by the Contract Documents except as provided otherwise by Laws or Regulations, and shall be executed by such sureties as are named in the current list of "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Circular 570 (amended) by the Financial Management Service, Surety Bond Branch, U.S. Department of the Treasury. All Bonds signed by an agent must be accompanied by a certified copy of such agent's authority to act.

C. If the surety on any Bond furnished by CONTRACTOR is declared bankrupt or becomes insolvent or its right to do business is terminated in any state where any part of the Project is located or it ceases to meet the requirements of paragraph 5.01.B, CONTRACTOR shall within 20 days thereafter substitute another Bond and surety, both of which shall comply with the requirements of paragraphs 5.01.B and 5.02.

5.02 *Licensed Sureties and Insurers*

A. All Bonds and insurance required by the Contract Documents to be purchased and maintained by OWNER or CONTRACTOR shall be obtained from surety or insurance companies that are duly licensed or authorized in the jurisdiction in which the Project is located to issue Bonds or insurance policies for the limits and coverages so required. Such surety and insurance companies shall also meet such additional requirements and qualifications as may be provided in the Supplementary Conditions.

5.03 *Certificates of Insurance*

A. CONTRACTOR shall deliver to OWNER, with copies to each additional insured identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance requested by OWNER or any other additional insured) which CONTRACTOR is required to purchase and maintain. OWNER shall deliver to CONTRACTOR, with copies to each additional insured identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance requested by

CONTRACTOR or any other additional insured) which OWNER is required to purchase and maintain.

5.04 *CONTRACTOR's Liability Insurance*

A. CONTRACTOR shall purchase and maintain such liability and other insurance as is appropriate for the Work being performed and as will provide protection from claims set forth below which may arise out of or result from CONTRACTOR's performance of the Work and CONTRACTOR's other obligations under the Contract Documents, whether it is to be performed by CONTRACTOR, any Subcontractor or Supplier, or by anyone directly or indirectly employed by any of them to perform any of the Work, or by anyone for whose acts any of them may be liable:

1. claims under workers' compensation, disability benefits, and other similar employee benefit acts;

2. claims for damages because of bodily injury, occupational sickness or disease, or death of CONTRACTOR's employees;

3. claims for damages because of bodily injury, sickness or disease, or death of any person other than CONTRACTOR's employees;

4. claims for damages insured by reasonably available personal injury liability coverage which are sustained: (i) by any person as a result of an offense directly or indirectly related to the employment of such person by CONTRACTOR, or (ii) by any other person for any other reason;

5. claims for damages, other than to the Work itself, because of injury to or destruction of tangible property wherever located, including loss of use resulting therefrom; and

6. claims for damages because of bodily injury or death of any person or

property damage arising out of the ownership, maintenance or use of any motor vehicle.

B. The policies of insurance so required by this paragraph 5.04 to be purchased and maintained shall:

1. with respect to insurance required by paragraphs 5.04.A.3 through 5.04.A.6 inclusive, include as additional insureds (subject to any customary exclusion in respect of professional liability) OWNER, ENGINEER, ENGINEER's Consultants, and any other individuals or entities identified in the Supplementary Conditions, all of whom shall be listed as additional insureds, and include coverage for the respective officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of all such additional insureds, and the insurance afforded to these additional insureds shall provide primary coverage for all claims covered thereby;

2. include at least the specific coverages and be written for not less than the limits of liability provided in the Supplementary Conditions or required by Laws or Regulations, whichever is greater;

3. include completed operations insurance;

4. include contractual liability insurance covering CONTRACTOR's indemnity obligations under paragraphs 6.07, 6.11, and 6.20;

5. contain a provision or endorsement that the coverage afforded will not be canceled, materially changed or renewal refused until at least thirty days prior written notice has been given to OWNER and CONTRACTOR and to each other additional insured identified in the Supplementary Conditions to whom a certificate of insurance has been issued (and the certificates of insurance furnished by the

CONTRACTOR pursuant to paragraph 5.03 will so provide);

6. remain in effect at least until final payment and at all times thereafter when CONTRACTOR may be correcting, removing, or replacing defective Work in accordance with paragraph 13.07; and

7. with respect to completed operations insurance, and any insurance coverage written on a claims-made basis, remain in effect for at least two years after final payment (and CONTRACTOR shall furnish OWNER and each other additional insured identified in the Supplementary Conditions, to whom a certificate of insurance has been issued, evidence satisfactory to OWNER and any such additional insured of continuation of such insurance at final payment and one year thereafter).

5.05 *OWNER's Liability Insurance*

A. In addition to the insurance required to be provided by CONTRACTOR under paragraph 5.04, OWNER, at OWNER's option, may purchase and maintain at OWNER's expense OWNER's own liability insurance as will protect OWNER against claims which may arise from operations under the Contract Documents.

5.06 *Property Insurance*

A. Unless otherwise provided in the Supplementary Conditions, OWNER shall purchase and maintain property insurance upon the Work at the Site in the amount of the full replacement cost thereof (subject to such deductible amounts as may be provided in the Supplementary Conditions or required by Laws and Regulations). This insurance shall:

1. include the interests of OWNER, CONTRACTOR, Subcontractors, ENGINEER, ENGINEER's Consultants, and any other individuals or entities identified in the Supplementary Conditions, and the officers, directors, partners, employees, agents, and

other consultants and subcontractors of each and any of them, each of whom is deemed to have an insurable interest and shall be listed as an additional insured;

2. be written on a Builder's Risk "all-risk" or open peril or special causes of loss policy form that shall at least include insurance for physical loss or damage to the Work, temporary buildings, false work, and materials and equipment in transit, and shall insure against at least the following perils or causes of loss: fire, lightning, extended coverage, theft, vandalism and malicious mischief, earthquake, collapse, debris removal, demolition occasioned by enforcement of Laws and Regulations, water damage, and such other perils or causes of loss as may be specifically required by the Supplementary Conditions;

3. include expenses incurred in the repair or replacement of any insured property (including but not limited to fees and charges of engineers and architects);

4. cover materials and equipment stored at the Site or at another location that was agreed to in writing by OWNER prior to being incorporated in the Work, provided that such materials and equipment have been included in an Application for Payment recommended by ENGINEER;

5. allow for partial utilization of the Work by OWNER;

6. include testing and startup; and

7. be maintained in effect until final payment is made unless otherwise agreed to in writing by OWNER, CONTRACTOR, and ENGINEER with 30 days written notice to each other additional insured to whom a certificate of insurance has been issued.

B. OWNER shall purchase and maintain such boiler and machinery insurance or additional property insurance as may be required by the

Supplementary Conditions or Laws and Regulations which will include the interests of OWNER, CONTRACTOR, Subcontractors, ENGINEER, ENGINEER's Consultants, and any other individuals or entities identified in the Supplementary Conditions, each of whom is deemed to have an insurable interest and shall be listed as an insured or additional insured.

C. All the policies of insurance (and the certificates or other evidence thereof) required to be purchased and maintained in accordance with paragraph 5.06 will contain a provision or endorsement that the coverage afforded will not be canceled or materially changed or renewal refused until at least 30 days prior written notice has been given to OWNER and CONTRACTOR and to each other additional insured to whom a certificate of insurance has been issued and will contain waiver provisions in accordance with paragraph 5.07.

D. OWNER shall not be responsible for purchasing and maintaining any property insurance specified in this paragraph 5.06 to protect the interests of CONTRACTOR, Subcontractors, or others in the Work to the extent of any deductible amounts that are identified in the Supplementary Conditions. The risk of loss within such identified deductible amount will be borne by CONTRACTOR, Subcontractors, or others suffering any such loss, and if any of them wishes property insurance coverage within the limits of such amounts, each may purchase and maintain it at the purchaser's own expense.

E. If CONTRACTOR requests in writing that other special insurance be included in the property insurance policies provided under paragraph 5.06, OWNER shall, if possible, include such insurance, and the cost thereof will be charged to CONTRACTOR by appropriate Change Order or Written Amendment. Prior to commencement of the Work at the Site, OWNER shall in writing advise CONTRACTOR whether or not such other insurance has been procured by OWNER.

5.07 *Waiver of Rights*

A. OWNER and CONTRACTOR intend that all policies purchased in accordance with paragraph 5.06 will protect OWNER, CONTRACTOR, Subcontractors, ENGINEER, ENGINEER's Consultants, and all other individuals or entities identified in the Supplementary Conditions to be listed as insureds or additional insureds (and the officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them) in such policies and will provide primary coverage for all losses and damages caused by the perils or causes of loss covered thereby. All such policies shall contain provisions to the effect that in the event of payment of any loss or damage the insurers will have no rights of recovery against any of the insureds or additional insureds thereunder. OWNER and CONTRACTOR waive all rights against each other and their respective officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them for all losses and damages caused by, arising out of or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Work; and, in addition, waive all such rights against Subcontractors, ENGINEER, ENGINEER's Consultants, and all other individuals or entities identified in the Supplementary Conditions to be listed as insureds or additional insureds (and the officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them) under such policies for losses and damages so caused. None of the above waivers shall extend to the rights that any party making such waiver may have to the proceeds of insurance held by OWNER as trustee or otherwise payable under any policy so issued.

B. OWNER waives all rights against CONTRACTOR, Subcontractors, ENGINEER, ENGINEER's Consultants, and the officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them for:

1. loss due to business interruption, loss of use, or other consequential loss extending beyond direct physical loss or damage to OWNER's property or the Work caused by, arising out of, or resulting from

fire or other peril whether or not insured by OWNER; and

2. loss or damage to the completed Project or part thereof caused by, arising out of, or resulting from fire or other insured peril or cause of loss covered by any property insurance maintained on the completed Project or part thereof by OWNER during partial utilization pursuant to paragraph 14.05, after Substantial Completion pursuant to paragraph 14.04, or after final payment pursuant to paragraph 14.07.

C. Any insurance policy maintained by OWNER covering any loss, damage or consequential loss referred to in paragraph 5.07.B shall contain provisions to the effect that in the event of payment of any such loss, damage, or consequential loss, the insurers will have no rights of recovery against CONTRACTOR, Subcontractors, ENGINEER, or ENGINEER's Consultants and the officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them.

5.08 Receipt and Application of Insurance Proceeds

A. Any insured loss under the policies of insurance required by paragraph 5.06 will be adjusted with OWNER and made payable to OWNER as fiduciary for the insureds, as their interests may appear, subject to the requirements of any applicable mortgage clause and of paragraph 5.08.B. OWNER shall deposit in a separate account any money so received and shall distribute it in accordance with such agreement as the parties in interest may reach. If no other special agreement is reached, the damaged Work shall be repaired or replaced, the moneys so received applied on account thereof, and the Work and the cost thereof covered by an appropriate Change Order or Written Amendment.

B. OWNER as fiduciary shall have power to adjust and settle any loss with the insurers unless one of the parties in interest shall object in writing within 15 days after the occurrence of loss to

OWNER's exercise of this power. If such objection be made, OWNER as fiduciary shall make settlement with the insurers in accordance with such agreement as the parties in interest may reach. If no such agreement among the parties in interest is reached, OWNER as fiduciary shall adjust and settle the loss with the insurers and, if required in writing by any party in interest, OWNER as fiduciary shall give bond for the proper performance of such duties.

5.09 Acceptance of Bonds and Insurance; Option to Replace

A. If either OWNER or CONTRACTOR has any objection to the coverage afforded by or other provisions of the Bonds or insurance required to be purchased and maintained by the other party in accordance with Article 5 on the basis of non-conformance with the Contract Documents, the objecting party shall so notify the other party in writing within 10 days after receipt of the certificates (or other evidence requested) required by paragraph 2.05.C. OWNER and CONTRACTOR shall each provide to the other such additional information in respect of insurance provided as the other may reasonably request. If either party does not purchase or maintain all of the Bonds and insurance required of such party by the Contract Documents, such party shall notify the other party in writing of such failure to purchase prior to the start of the Work, or of such failure to maintain prior to any change in the required coverage. Without prejudice to any other right or remedy, the other party may elect to obtain equivalent Bonds or insurance to protect such other party's interests at the expense of the party who was required to provide such coverage, and a Change Order shall be issued to adjust the Contract Price accordingly.

5.10 Partial Utilization, Acknowledgment of Property Insurer

A. If OWNER finds it necessary to occupy or use a portion or portions of the Work prior to Substantial Completion of all the Work as provided in paragraph 14.05, no such use or occupancy shall commence before the insurers providing the property insurance pursuant to paragraph 5.06

have acknowledged notice thereof and in writing effected any changes in coverage necessitated thereby. The insurers providing the property insurance shall consent by endorsement on the policy or policies, but the property insurance shall not be canceled or permitted to lapse on account of any such partial use or occupancy.

ARTICLE 6 - CONTRACTOR'S RESPONSIBILITIES

6.01 *Supervision and Superintendence*

A. CONTRACTOR shall supervise, inspect, and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents. CONTRACTOR shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction, but CONTRACTOR shall not be responsible for the negligence of OWNER or ENGINEER in the design or specification of a specific means, method, technique, sequence, or procedure of construction which is shown or indicated in and expressly required by the Contract Documents. CONTRACTOR shall be responsible to see that the completed Work complies accurately with the Contract Documents.

B. At all times during the progress of the Work, CONTRACTOR shall assign a competent resident superintendent thereto who shall not be replaced without written notice to OWNER and ENGINEER except under extraordinary circumstances. The superintendent will be CONTRACTOR's representative at the Site and shall have authority to act on behalf of CONTRACTOR. All communications given to or received from the superintendent shall be binding on CONTRACTOR.

6.02 *Labor; Working Hours*

A. CONTRACTOR shall provide competent, suitably qualified personnel to survey, lay out, and construct the Work as required by the Contract

Documents. CONTRACTOR shall at all times maintain good discipline and order at the Site.

B. Except as otherwise required for the safety or protection of persons or the Work or property at the Site or adjacent thereto, and except as otherwise stated in the Contract Documents, all Work at the Site shall be performed during regular working hours, and CONTRACTOR will not permit overtime work or the performance of Work on Saturday, Sunday, or any legal holiday without OWNER's written consent (which will not be unreasonably withheld) given after prior written notice to ENGINEER.

6.03 *Services, Materials, and Equipment*

A. Unless otherwise specified in the General Requirements, CONTRACTOR shall provide and assume full responsibility for all services, materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities, and all other facilities and incidentals necessary for the performance, testing, start-up, and completion of the Work.

B. All materials and equipment incorporated into the Work shall be as specified or, if not specified, shall be of good quality and new, except as otherwise provided in the Contract Documents. All warranties and guarantees specifically called for by the Specifications shall expressly run to the benefit of OWNER. If required by ENGINEER, CONTRACTOR shall furnish satisfactory evidence (including reports of required tests) as to the source, kind, and quality of materials and equipment. All materials and equipment shall be stored, applied, installed, connected, erected, protected, used, cleaned, and conditioned in accordance with instructions of the applicable Supplier, except as otherwise may be provided in the Contract Documents.

6.04 *Progress Schedule*

A. CONTRACTOR shall adhere to the progress schedule established in accordance with paragraph

2.07 as it may be adjusted from time to time as provided below.

1. CONTRACTOR shall submit to ENGINEER for acceptance (to the extent indicated in paragraph 2.07) proposed adjustments in the progress schedule that will not result in changing the Contract Times (or Milestones). Such adjustments will conform generally to the progress schedule then in effect and additionally will comply with any provisions of the General Requirements applicable thereto.

2. Proposed adjustments in the progress schedule that will change the Contract Times (or Milestones) shall be submitted in accordance with the requirements of Article 12. Such adjustments may only be made by a Change Order or Written Amendment in accordance with Article 12.

6.05 *Substitutes and "Or-Equals"*

A. Whenever an item of material or equipment is specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular Supplier, the specification or description is intended to establish the type, function, appearance, and quality required. Unless the specification or description contains or is followed by words reading that no like, equivalent, or "or-equal" item or no substitution is permitted, other items of material or equipment or material or equipment of other Suppliers may be submitted to ENGINEER for review under the circumstances described below.

1. *"Or-Equal" Items:* If in ENGINEER's sole discretion an item of material or equipment proposed by CONTRACTOR is functionally equal to that named and sufficiently similar so that no change in related Work will be required, it may be considered by ENGINEER as an "or-equal" item, in which case review and approval of the proposed item may, in ENGINEER's sole discretion, be accomplished without compliance with some

or all of the requirements for approval of proposed substitute items. For the purposes of this paragraph 6.05.A.1, a proposed item of material or equipment will be considered functionally equal to an item so named if:

a. in the exercise of reasonable judgment ENGINEER determines that: (i) it is at least equal in quality, durability, appearance, strength, and design characteristics; (ii) it will reliably perform at least equally well the function imposed by the design concept of the completed Project as a functioning whole, and;

b. CONTRACTOR certifies that: (i) there is no increase in cost to the OWNER; and (ii) it will conform substantially, even with deviations, to the detailed requirements of the item named in the Contract Documents.

2. Substitute Items

a. If in ENGINEER's sole discretion an item of material or equipment proposed by CONTRACTOR does not qualify as an "or-equal" item under paragraph 6.05.A.1, it will be considered a proposed substitute item.

b. CONTRACTOR shall submit sufficient information as provided below to allow ENGINEER to determine that the item of material or equipment proposed is essentially equivalent to that named and an acceptable substitute therefor. Requests for review of proposed substitute items of material or equipment will not be accepted by ENGINEER from anyone other than CONTRACTOR.

c. The procedure for review by ENGINEER will be as set forth in paragraph 6.05.A.2.d, as supplemented in the General Requirements and as ENGINEER may decide is appropriate under the circumstances.

d. CONTRACTOR shall first make written application to ENGINEER for review of a proposed substitute item of material or equipment that CONTRACTOR seeks to furnish or use. The application shall certify that the proposed substitute item will perform adequately the functions and achieve the results called for by the general design, be similar in substance to that specified, and be suited to the same use as that specified. The application will state the extent, if any, to which the use of the proposed substitute item will prejudice CONTRACTOR's achievement of Substantial Completion on time, whether or not use of the proposed substitute item in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with OWNER for work on the Project) to adapt the design to the proposed substitute item and whether or not incorporation or use of the proposed substitute item in connection with the Work is subject to payment of any license fee or royalty. All variations of the proposed substitute item from that specified will be identified in the application, and available engineering, sales, maintenance, repair, and replacement services will be indicated. The application will also contain an itemized estimate of all costs or credits that will result directly or indirectly from use of such substitute item, including costs of redesign and claims of other contractors affected by any resulting change, all of which will be considered by ENGINEER in evaluating the proposed substitute item. ENGINEER may require CONTRACTOR to furnish additional data about the proposed substitute item.

B. *Substitute Construction Methods or Procedures:* If a specific means, method, technique, sequence, or procedure of construction is shown or indicated in and expressly required by the Contract Documents, CONTRACTOR may furnish or utilize a

substitute means, method, technique, sequence, or procedure of construction approved by ENGINEER. CONTRACTOR shall submit sufficient information to allow ENGINEER, in ENGINEER's sole discretion, to determine that the substitute proposed is equivalent to that expressly called for by the Contract Documents. The procedure for review by ENGINEER will be similar to that provided in subparagraph 6.05.A.2.

C. *Engineer's Evaluation:* ENGINEER will be allowed a reasonable time within which to evaluate each proposal or submittal made pursuant to paragraphs 6.05.A and 6.05.B. ENGINEER will be the sole judge of acceptability. No "or-equal" or substitute will be ordered, installed or utilized until ENGINEER's review is complete, which will be evidenced by either a Change Order for a substitute or an approved Shop Drawing for an "or equal." ENGINEER will advise CONTRACTOR in writing of any negative determination.

D. *Special Guarantee:* OWNER may require CONTRACTOR to furnish at CONTRACTOR's expense a special performance guarantee or other surety with respect to any substitute.

E. *ENGINEER's Cost Reimbursement:* ENGINEER will record time required by ENGINEER and ENGINEER's Consultants in evaluating substitute proposed or submitted by CONTRACTOR pursuant to paragraphs 6.05.A.2 and 6.05.B and in making changes in the Contract Documents (or in the provisions of any other direct contract with OWNER for work on the Project) occasioned thereby. Whether or not ENGINEER approves a substitute item so proposed or submitted by CONTRACTOR, CONTRACTOR shall reimburse OWNER for the charges of ENGINEER and ENGINEER's Consultants for evaluating each such proposed substitute.

F. *CONTRACTOR's Expense:* CONTRACTOR shall provide all data in support of any proposed substitute or "or-equal" at CONTRACTOR's expense.

6.06 *Concerning Subcontractors, Suppliers, and Others*

A. CONTRACTOR shall not employ any Subcontractor, Supplier, or other individual or entity (including those acceptable to OWNER as indicated in paragraph 6.06.B), whether initially or as a replacement, against whom OWNER may have reasonable objection. CONTRACTOR shall not be required to employ any Subcontractor, Supplier, or other individual or entity to furnish or perform any of the Work against whom CONTRACTOR has reasonable objection.

B. If the Supplementary Conditions require the identity of certain Subcontractors, Suppliers, or other individuals or entities to be submitted to OWNER in advance for acceptance by OWNER by a specified date prior to the Effective Date of the Agreement, and if CONTRACTOR has submitted a list thereof in accordance with the Supplementary Conditions, OWNER's acceptance (either in writing or by failing to make written objection thereto by the date indicated for acceptance or objection in the Bidding Documents or the Contract Documents) of any such Subcontractor, Supplier, or other individual or entity so identified may be revoked on the basis of reasonable objection after due investigation. CONTRACTOR shall submit an acceptable replacement for the rejected Subcontractor, Supplier, or other individual or entity, and the Contract Price will be adjusted by the difference in the cost occasioned by such replacement, and an appropriate Change Order will be issued or Written Amendment signed. No acceptance by OWNER of any such Subcontractor, Supplier, or other individual or entity, whether initially or as a replacement, shall constitute a waiver of any right of OWNER or ENGINEER to reject defective Work.

C. CONTRACTOR shall be fully responsible to OWNER and ENGINEER for all acts and omissions of the Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work just as CONTRACTOR is responsible for CONTRACTOR's own acts and omissions. Nothing in the Contract Documents shall create for the benefit of any such Subcontractor, Supplier, or other individual or entity any contractual relationship between OWNER or ENGINEER and any such

Subcontractor, Supplier or other individual or entity, nor shall it create any obligation on the part of OWNER or ENGINEER to pay or to see to the payment of any moneys due any such Subcontractor, Supplier, or other individual or entity except as may otherwise be required by Laws and Regulations.

D. CONTRACTOR shall be solely responsible for scheduling and coordinating the Work of Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work under a direct or indirect contract with CONTRACTOR.

E. CONTRACTOR shall require all Subcontractors, Suppliers, and such other individuals or entities performing or furnishing any of the Work to communicate with ENGINEER through CONTRACTOR.

F. The divisions and sections of the Specifications and the identifications of any Drawings shall not control CONTRACTOR in dividing the Work among Subcontractors or Suppliers or delineating the Work to be performed by any specific trade.

G. All Work performed for CONTRACTOR by a Subcontractor or Supplier will be pursuant to an appropriate agreement between CONTRACTOR and the Subcontractor or Supplier which specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract Documents for the benefit of OWNER and ENGINEER. Whenever any such agreement is with a Subcontractor or Supplier who is listed as an additional insured on the property insurance provided in paragraph 5.06, the agreement between the CONTRACTOR and the Subcontractor or Supplier will contain provisions whereby the Subcontractor or Supplier waives all rights against OWNER, CONTRACTOR, ENGINEER, ENGINEER's Consultants, and all other individuals or entities identified in the Supplementary Conditions to be listed as insureds or additional insureds (and the officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them) for all losses and damages caused by, arising out of, relating to, or resulting from any

of the perils or causes of loss covered by such policies and any other property insurance applicable to the Work. If the insurers on any such policies require separate waiver forms to be signed by any Subcontractor or Supplier, CONTRACTOR will obtain the same.

6.07 *Patent Fees and Royalties*

A. CONTRACTOR shall pay all license fees and royalties and assume all costs incident to the use in the performance of the Work or the incorporation in the Work of any invention, design, process, product, or device which is the subject of patent rights or copyrights held by others. If a particular invention, design, process, product, or device is specified in the Contract Documents for use in the performance of the Work and if to the actual knowledge of OWNER or ENGINEER its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of such rights shall be disclosed by OWNER in the Contract Documents. To the fullest extent permitted by Laws and Regulations, CONTRACTOR shall indemnify and hold harmless OWNER, ENGINEER, ENGINEER's Consultants, and the officers, directors, partners, employees or agents, and other consultants of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device not specified in the Contract Documents.

6.08 *Permits*

A. Unless otherwise provided in the Supplementary Conditions, CONTRACTOR shall obtain and pay for all construction permits and licenses. OWNER shall assist CONTRACTOR, when necessary, in obtaining such permits and licenses. CONTRACTOR shall pay all governmental charges and inspection fees necessary for the prosecution

of the Work which are applicable at the time of opening of Bids, or, if there are no Bids, on the Effective Date of the Agreement. CONTRACTOR shall pay all charges of utility owners for connections to the Work, and OWNER shall pay all charges of such utility owners for capital costs related thereto, such as plant investment fees.

6.09 *Laws and Regulations*

A. CONTRACTOR shall give all notices and comply with all Laws and Regulations applicable to the performance of the Work. Except where otherwise expressly required by applicable Laws and Regulations, neither OWNER nor ENGINEER shall be responsible for monitoring CONTRACTOR's compliance with any Laws or Regulations.

B. If CONTRACTOR performs any Work knowing or having reason to know that it is contrary to Laws or Regulations, CONTRACTOR shall bear all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such Work; however, it shall not be CONTRACTOR's primary responsibility to make certain that the Specifications and Drawings are in accordance with Laws and Regulations, but this shall not relieve CONTRACTOR of CONTRACTOR's obligations under paragraph 3.03.

C. Changes in Laws or Regulations not known at the time of opening of Bids (or, on the Effective Date of the Agreement if there were no Bids) having an effect on the cost or time of performance of the Work may be the subject of an adjustment in Contract Price or Contract Times. If OWNER and CONTRACTOR are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment, a Claim may be made therefor as provided in paragraph 10.05.

6.10 *Taxes*

A. CONTRACTOR shall pay all sales, consumer, use, and other similar taxes required to be paid by CONTRACTOR in accordance with the Laws and

Regulations of the place of the Project which are applicable during the performance of the Work.

6.11 *Use of Site and Other Areas*

A. *Limitation on Use of Site and Other Areas*

1. CONTRACTOR shall confine construction equipment, the storage of materials and equipment, and the operations of workers to the Site and other areas permitted by Laws and Regulations, and shall not unreasonably encumber the Site and other areas with construction equipment or other materials or equipment. CONTRACTOR shall assume full responsibility for any damage to any such land or area, or to the owner or occupant thereof, or of any adjacent land or areas resulting from the performance of the Work.

2. Should any claim be made by any such owner or occupant because of the performance of the Work, CONTRACTOR shall promptly settle with such other party by negotiation or otherwise resolve the claim by arbitration or other dispute resolution proceeding or at law.

3. To the fullest extent permitted by Laws and Regulations, CONTRACTOR shall indemnify and hold harmless OWNER, ENGINEER, ENGINEER's Consultant, and the officers, directors, partners, employees, agents, and other consultants of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any claim or action, legal or equitable, brought by any such owner or occupant against OWNER, ENGINEER, or any other party indemnified hereunder to the extent caused by or based upon CONTRACTOR's performance of the Work.

B. *Removal of Debris During Performance of the Work:* During the progress of the Work CONTRACTOR shall keep the Site and other areas free from accumulations of waste materials, rubbish, and other debris. Removal and disposal of such waste materials, rubbish, and other debris shall conform to applicable Laws and Regulations.

C. *Cleaning:* Prior to Substantial Completion of the Work CONTRACTOR shall clean the Site and make it ready for utilization by OWNER. At the completion of the Work CONTRACTOR shall remove from the Site all tools, appliances, construction equipment and machinery, and surplus materials and shall restore to original condition all property not designated for alteration by the Contract Documents.

D. *Loading Structures:* CONTRACTOR shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall CONTRACTOR subject any part of the Work or adjacent property to stresses or pressures that will endanger it.

6.12 *Record Documents*

A. CONTRACTOR shall maintain in a safe place at the Site one record copy of all Drawings, Specifications, Addenda, Written Amendments, Change Orders, Work Change Directives, Field Orders, and written interpretations and clarifications in good order and annotated to show changes made during construction. These record documents together with all approved Samples and a counterpart of all approved Shop Drawings will be available to ENGINEER for reference. Upon completion of the Work, these record documents, Samples, and Shop Drawings will be delivered to ENGINEER for OWNER.

6.13 *Safety and Protection*

A. CONTRACTOR shall be solely responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work. CONTRACTOR shall take all necessary precautions for the safety of, and shall provide the

necessary protection to prevent damage, injury or loss to:

1. all persons on the Site or who may be affected by the Work;
2. all the Work and materials and equipment to be incorporated therein, whether in storage on or off the Site; and
3. other property at the Site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, utilities, and Underground Facilities not designated for removal, relocation, or replacement in the course of construction.

B. CONTRACTOR shall comply with all applicable Laws and Regulations relating to the safety of persons or property, or to the protection of persons or property from damage, injury, or loss; and shall erect and maintain all necessary safeguards for such safety and protection. CONTRACTOR shall notify owners of adjacent property and of Underground Facilities and other utility owners when prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation, and replacement of their property. All damage, injury, or loss to any property referred to in paragraph 6.13.A.2 or 6.13.A.3 caused, directly or indirectly, in whole or in part, by CONTRACTOR, any Subcontractor, Supplier, or any other individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, shall be remedied by CONTRACTOR (except damage or loss attributable to the fault of Drawings or Specifications or to the acts or omissions of OWNER or ENGINEER or ENGINEER's Consultant, or anyone employed by any of them, or anyone for whose acts any of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of CONTRACTOR or any Subcontractor, Supplier, or other individual or entity directly or indirectly employed by any of them). CONTRACTOR's duties and responsibilities for safety and for protection of the Work shall continue until such time as all the Work

is completed and ENGINEER has issued a notice to OWNER and CONTRACTOR in accordance with paragraph 14.07.B that the Work is acceptable (except as otherwise expressly provided in connection with Substantial Completion).

6.14 *Safety Representative*

A. CONTRACTOR shall designate a qualified and experienced safety representative at the Site whose duties and responsibilities shall be the prevention of accidents and the maintaining and supervising of safety precautions and programs.

6.15 *Hazard Communication Programs*

A. CONTRACTOR shall be responsible for coordinating any exchange of material safety data sheets or other hazard communication information required to be made available to or exchanged between or among employers at the Site in accordance with Laws or Regulations.

6.16 *Emergencies*

A. In emergencies affecting the safety or protection of persons or the Work or property at the Site or adjacent thereto, CONTRACTOR is obligated to act to prevent threatened damage, injury, or loss. CONTRACTOR shall give ENGINEER prompt written notice if CONTRACTOR believes that any significant changes in the Work or variations from the Contract Documents have been caused thereby or are required as a result thereof. If ENGINEER determines that a change in the Contract Documents is required because of the action taken by CONTRACTOR in response to such an emergency, a Work Change Directive or Change Order will be issued.

6.17 *Shop Drawings and Samples*

A. CONTRACTOR shall submit Shop Drawings to ENGINEER for review and approval in accordance with the acceptable schedule of Shop Drawings and Sample submittals. All submittals will be identified as ENGINEER may require and in the number of copies specified in the General Requirements. The data shown on the Shop Drawings will be complete

with respect to quantities, dimensions, specified performance and design criteria, materials, and similar data to show ENGINEER the services, materials, and equipment CONTRACTOR proposes to provide and to enable ENGINEER to review the information for the limited purposes required by paragraph 6.17.E.

B. CONTRACTOR shall also submit Samples to ENGINEER for review and approval in accordance with the acceptable schedule of Shop Drawings and Sample submittals. Each Sample will be identified clearly as to material, Supplier, pertinent data such as catalog numbers, and the use for which intended and otherwise as ENGINEER may require to enable ENGINEER to review the submittal for the limited purposes required by paragraph 6.17.E. The numbers of each Sample to be submitted will be as specified in the Specifications.

C. Where a Shop Drawing or Sample is required by the Contract Documents or the schedule of Shop Drawings and Sample submittals acceptable to ENGINEER as required by paragraph 2.07, any related Work performed prior to ENGINEER's review and approval of the pertinent submittal will be at the sole expense and responsibility of CONTRACTOR.

D. *Submittal Procedures*

1. Before submitting each Shop Drawing or Sample, CONTRACTOR shall have determined and verified:

a. all field measurements, quantities, dimensions, specified performance criteria, installation requirements, materials, catalog numbers, and similar information with respect thereto;

b. all materials with respect to intended use, fabrication, shipping, handling, storage, assembly, and installation pertaining to the performance of the Work;

c. all information relative to means, methods, techniques, sequences, and

procedures of construction and safety precautions and programs incident thereto; and

d. CONTRACTOR shall also have reviewed and coordinated each Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Work and the Contract Documents.

2. Each submittal shall bear a stamp or specific written indication that CONTRACTOR has satisfied CONTRACTOR's obligations under the Contract Documents with respect to CONTRACTOR's review and approval of that submittal.

3. At the time of each submittal, CONTRACTOR shall give ENGINEER specific written notice of such variations, if any, that the Shop Drawing or Sample submitted may have from the requirements of the Contract Documents, such notice to be in a written communication separate from the submittal; and, in addition, shall cause a specific notation to be made on each Shop Drawing and Sample submitted to ENGINEER for review and approval of each such variation.

E. *ENGINEER's Review*

1. ENGINEER will timely review and approve Shop Drawings and Samples in accordance with the schedule of Shop Drawings and Sample submittals acceptable to ENGINEER. ENGINEER's review and approval will be only to determine if the items covered by the submittals will, after installation or incorporation in the Work, conform to the information given in the Contract Documents and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents.

2. ENGINEER's review and approval will not extend to means, methods, techniques, sequences, or procedures of

construction (except where a particular means, method, technique, sequence, or procedure of construction is specifically and expressly called for by the Contract Documents) or to safety precautions or programs incident thereto. The review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.

3. ENGINEER's review and approval of Shop Drawings or Samples shall not relieve CONTRACTOR from responsibility for any variation from the requirements of the Contract Documents unless CONTRACTOR has in writing called ENGINEER's attention to each such variation at the time of each submittal as required by paragraph 6.17.D.3 and ENGINEER has given written approval of each such variation by specific written notation thereof incorporated in or accompanying the Shop Drawing or Sample approval; nor will any approval by ENGINEER relieve CONTRACTOR from responsibility for complying with the requirements of paragraph 6.17.D.1.

F. *Resubmittal Procedures*

1. CONTRACTOR shall make corrections required by ENGINEER and shall return the required number of corrected copies of Shop Drawings and submit as required new Samples for review and approval. CONTRACTOR shall direct specific attention in writing to revisions other than the corrections called for by ENGINEER on previous submittals.

6.18 *Continuing the Work*

A. CONTRACTOR shall carry on the Work and adhere to the progress schedule during all disputes or disagreements with OWNER. No Work shall be delayed or postponed pending resolution of any disputes or disagreements, except as permitted by paragraph 15.04 or as OWNER and CONTRACTOR may otherwise agree in writing.

6.19 *CONTRACTOR's General Warranty and Guarantee*

A. CONTRACTOR warrants and guarantees to OWNER, ENGINEER, and ENGINEER's Consultants that all Work will be in accordance with the Contract Documents and will not be defective. CONTRACTOR's warranty and guarantee hereunder excludes defects or damage caused by:

1. abuse, modification, or improper maintenance or operation by persons other than CONTRACTOR, Subcontractors, Suppliers, or any other individual or entity for whom CONTRACTOR is responsible; or

2. normal wear and tear under normal usage.

B. CONTRACTOR's obligation to perform and complete the Work in accordance with the Contract Documents shall be absolute. None of the following will constitute an acceptance of Work that is not in accordance with the Contract Documents or a release of CONTRACTOR's obligation to perform the Work in accordance with the Contract Documents:

1. observations by ENGINEER;

2. recommendation by ENGINEER or payment by OWNER of any progress or final payment;

3. the issuance of a certificate of Substantial Completion by ENGINEER or any payment related thereto by OWNER;

4. use or occupancy of the Work or any part thereof by OWNER;

5. any acceptance by OWNER or any failure to do so;

6. any review and approval of a Shop Drawing or Sample submittal or the issuance of a notice of acceptability by ENGINEER;

7. any inspection, test, or approval by others; or

8. any correction of defective Work by OWNER.

6.20 Indemnification

A. To the fullest extent permitted by Laws and Regulations, CONTRACTOR shall indemnify and hold harmless OWNER, ENGINEER, ENGINEER's Consultants, and the officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the performance of the Work, provided that any such claim, cost, loss, or damage:

1. is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom; and

2. is caused in whole or in part by any negligent act or omission of CONTRACTOR, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work or anyone for whose acts any of them may be liable, regardless of whether or not caused in part by any negligence or omission of an individual or entity indemnified hereunder or whether liability is imposed upon such indemnified party by Laws and Regulations regardless of the negligence of any such individual or entity.

B. In any and all claims against OWNER or ENGINEER or any of their respective consultants, agents, officers, directors, partners, or employees by any employee (or the survivor or personal representative of such employee) of CONTRACTOR, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of

them to perform any of the Work, or anyone for whose acts any of them may be liable, the indemnification obligation under paragraph 6.20.A shall not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for CONTRACTOR or any such Subcontractor, Supplier, or other individual or entity under workers' compensation acts, disability benefit acts, or other employee benefit acts.

C. The indemnification obligations of CONTRACTOR under paragraph 6.20.A shall not extend to the liability of ENGINEER and ENGINEER's Consultants or to the officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them arising out of:

1. the preparation or approval of, or the failure to prepare or approve, maps, Drawings, opinions, reports, surveys, Change Orders, designs, or Specifications; or

2. giving directions or instructions, or failing to give them, if that is the primary cause of the injury or damage.

ARTICLE 7 - OTHER WORK

7.01 Related Work at Site

A. OWNER may perform other work related to the Project at the Site by OWNER's employees, or let other direct contracts therefor, or have other work performed by utility owners. If such other work is not noted in the Contract Documents, then:

1. written notice thereof will be given to CONTRACTOR prior to starting any such other work; and

2. if OWNER and CONTRACTOR are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times that should be allowed as a result of such other

work, a Claim may be made therefor as provided in paragraph 10.05.

B. CONTRACTOR shall afford each other contractor who is a party to such a direct contract and each utility owner (and OWNER, if OWNER is performing the other work with OWNER's employees) proper and safe access to the Site and a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such other work and shall properly coordinate the Work with theirs. Unless otherwise provided in the Contract Documents, CONTRACTOR shall do all cutting, fitting, and patching of the Work that may be required to properly connect or otherwise make its several parts come together and properly integrate with such other work. CONTRACTOR shall not endanger any work of others by cutting, excavating, or otherwise altering their work and will only cut or alter their work with the written consent of ENGINEER and the others whose work will be affected. The duties and responsibilities of CONTRACTOR under this paragraph are for the benefit of such utility owners and other contractors to the extent that there are comparable provisions for the benefit of CONTRACTOR in said direct contracts between OWNER and such utility owners and other contractors.

C. If the proper execution or results of any part of CONTRACTOR's Work depends upon work performed by others under this Article 7, CONTRACTOR shall inspect such other work and promptly report to ENGINEER in writing any delays, defects, or deficiencies in such other work that render it unavailable or unsuitable for the proper execution and results of CONTRACTOR's Work. CONTRACTOR's failure to so report will constitute an acceptance of such other work as fit and proper for integration with CONTRACTOR's Work except for latent defects and deficiencies in such other work.

7.02 Coordination

A. If OWNER intends to contract with others for the performance of other work on the Project at the Site, the following will be set forth in Supplementary Conditions:

1. the individual or entity who will have authority and responsibility for coordination of the activities among the various contractors will be identified;

2. the specific matters to be covered by such authority and responsibility will be itemized; and

3. the extent of such authority and responsibilities will be provided.

B. Unless otherwise provided in the Supplementary Conditions, OWNER shall have sole authority and responsibility for such coordination.

ARTICLE 8 - OWNER'S RESPONSIBILITIES

8.01 Communications to Contractor

A. Except as otherwise provided in these General Conditions, OWNER shall issue all communications to CONTRACTOR through ENGINEER.

8.02 Replacement of ENGINEER

A. In case of termination of the employment of ENGINEER, OWNER shall appoint an engineer to whom CONTRACTOR makes no reasonable objection, whose status under the Contract Documents shall be that of the former ENGINEER.

8.03 Furnish Data

A. OWNER shall promptly furnish the data required of OWNER under the Contract Documents.

8.04 Pay Promptly When Due

A. OWNER shall make payments to CONTRACTOR promptly when they are due as provided in paragraphs 14.02.C and 14.07.C unless otherwise stipulated in the Supplemental Conditions of this contract.

8.05 *Lands and Easements; Reports and Tests*

A. OWNER's duties in respect of providing lands and easements and providing engineering surveys to establish reference points are set forth in paragraphs 4.01 and 4.05. Paragraph 4.02 refers to OWNER's identifying and making available to CONTRACTOR copies of reports of explorations and tests of subsurface conditions and drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site that have been utilized by ENGINEER in preparing the Contract Documents.

8.06 *Insurance*

A. OWNER's responsibilities, if any, in respect to purchasing and maintaining liability and property insurance are set forth in Article 5.

8.07 *Change Orders*

A. OWNER is obligated to execute Change Orders as indicated in paragraph 10.03.

8.08 *Inspections, Tests, and Approvals*

A. OWNER's responsibility in respect to certain inspections, tests, and approvals is set forth in paragraph 13.03.B.

8.09 *Limitations on OWNER's Responsibilities*

A. The OWNER shall not supervise, direct, or have control or authority over, nor be responsible for, CONTRACTOR's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of CONTRACTOR to comply with Laws and Regulations applicable to the performance of the Work. OWNER will not be responsible for CONTRACTOR's failure to perform the Work in accordance with the Contract Documents.

8.10 *Undisclosed Hazardous Environmental Condition*

A. OWNER's responsibility in respect to an undisclosed Hazardous Environmental Condition is set forth in paragraph 4.06.

8.11 *Evidence of Financial Arrangements*

A. If and to the extent OWNER has agreed to furnish CONTRACTOR reasonable evidence that financial arrangements have been made to satisfy OWNER's obligations under the Contract Documents, OWNER's responsibility in respect thereof will be as set forth in the Supplementary Conditions.

ARTICLE 9 - ENGINEER'S STATUS DURING CONSTRUCTION

9.01 *OWNER'S Representative*

A. ENGINEER will be OWNER's representative during the construction period. The duties and responsibilities and the limitations of authority of ENGINEER as OWNER's representative during construction are set forth in the Contract Documents and will not be changed without written consent of OWNER and ENGINEER.

9.02 *Visits to Site*

A. ENGINEER will make visits to the Site at intervals appropriate to the various stages of construction as ENGINEER deems necessary in order to observe as an experienced and qualified design professional the progress that has been made and the quality of the various aspects of CONTRACTOR's executed Work. Based on information obtained during such visits and observations, ENGINEER, for the benefit of OWNER, will determine, in general, if the Work is proceeding in accordance with the Contract Documents. ENGINEER will not be required to make exhaustive or continuous inspections on the Site to check the quality or quantity of the Work. ENGINEER's efforts will be directed toward providing for OWNER a greater degree of confidence that the completed Work will conform generally to the Contract Documents. On the basis of such visits and

observations, ENGINEER will keep OWNER informed of the progress of the Work and will endeavor to guard OWNER against defective Work.

B. ENGINEER's visits and observations are subject to all the limitations on ENGINEER's authority and responsibility set forth in paragraph 9.10, and particularly, but without limitation, during or as a result of ENGINEER's visits or observations of CONTRACTOR's Work ENGINEER will not supervise, direct, control, or have authority over or be responsible for CONTRACTOR's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of CONTRACTOR to comply with Laws and Regulations applicable to the performance of the Work.

9.03 *Project Representative*

A. If OWNER and ENGINEER agree, ENGINEER will furnish a Resident Project Representative to assist ENGINEER in providing more extensive observation of the Work. The responsibilities and authority and limitations thereon of any such Resident Project Representative and assistants will be as provided in paragraph 9.10 and in the Supplementary Conditions. If OWNER designates another representative or agent to represent OWNER at the Site who is not ENGINEER's Consultant, agent or employee, the responsibilities and authority and limitations thereon of such other individual or entity will be as provided in the Supplementary Conditions.

9.04 *Clarifications and Interpretations*

A. ENGINEER will issue with reasonable promptness such written clarifications or interpretations of the requirements of the Contract Documents as ENGINEER may determine necessary, which shall be consistent with the intent of and reasonably inferable from the Contract Documents. Such written clarifications and interpretations will be binding on OWNER and CONTRACTOR. If OWNER and CONTRACTOR are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, that

should be allowed as a result of a written clarification or interpretation, a Claim may be made therefor as provided in paragraph 10.05.

9.05 *Authorized Variations in Work*

A. ENGINEER may authorize minor variations in the Work from the requirements of the Contract Documents which do not involve an adjustment in the Contract Price or the Contract Times and are compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. These may be accomplished by a Field Order and will be binding on OWNER and also on CONTRACTOR, who shall perform the Work involved promptly. If OWNER and CONTRACTOR are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, as a result of a Field Order, a Claim may be made therefor as provided in paragraph 10.05.

9.06 *Rejecting Defective Work*

A. ENGINEER will have authority to disapprove or reject Work which ENGINEER believes to be defective, or that ENGINEER believes will not produce a completed Project that conforms to the Contract Documents or that will prejudice the integrity of the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. ENGINEER will also have authority to require special inspection or testing of the Work as provided in paragraph 13.04, whether or not the Work is fabricated, installed, or completed.

9.07 *Shop Drawings, Change Orders and Payments*

A. In connection with ENGINEER's authority as to Shop Drawings and Samples, see paragraph 6.17.

B. In connection with ENGINEER's authority as to Change Orders, see Articles 10, 11, and 12.

C. In connection with ENGINEER's authority as to Applications for Payment, see Article 14.

9.08 *Determinations for Unit Price Work*

A. ENGINEER will determine the actual quantities and classifications of Unit Price Work performed by CONTRACTOR. ENGINEER will review with CONTRACTOR the ENGINEER's preliminary determinations on such matters before rendering a written decision thereon (by recommendation of an Application for Payment or otherwise). ENGINEER's written decision thereon will be final and binding (except as modified by ENGINEER to reflect changed factual conditions or more accurate data) upon OWNER and CONTRACTOR, subject to the provisions of paragraph 10.05.

9.09 *Decisions on Requirements of Contract Documents and Acceptability of Work*

A. ENGINEER will be the initial interpreter of the requirements of the Contract Documents and judge of the acceptability of the Work thereunder. Claims, disputes and other matters relating to the acceptability of the Work, the quantities and classifications of Unit Price Work, the interpretation of the requirements of the Contract Documents pertaining to the performance of the Work, and Claims seeking changes in the Contract Price or Contract Times will be referred initially to ENGINEER in writing, in accordance with the provisions of paragraph 10.05, with a request for a formal decision.

B. When functioning as interpreter and judge under this paragraph 9.09, ENGINEER will not show partiality to OWNER or CONTRACTOR and will not be liable in connection with any interpretation or decision rendered in good faith in such capacity. The rendering of a decision by ENGINEER pursuant to this paragraph 9.09 with respect to any such Claim, dispute, or other matter (except any which have been waived by the making or acceptance of final payment as provided in paragraph 14.07) will be a condition precedent to any exercise by OWNER or CONTRACTOR of such rights or remedies as either may otherwise have under the Contract Documents or by Laws or Regulations in respect of any such Claim, dispute, or other matter.

9.10 *Limitations on ENGINEER's Authority and Responsibilities*

A. Neither ENGINEER's authority or responsibility under this Article 9 or under any other provision of the Contract Documents nor any decision made by ENGINEER in good faith either to exercise or not exercise such authority or responsibility or the undertaking, exercise, or performance of any authority or responsibility by ENGINEER shall create, impose, or give rise to any duty in contract, tort, or otherwise owed by ENGINEER to CONTRACTOR, any Subcontractor, any Supplier, any other individual or entity, or to any surety for or employee or agent of any of them.

B. ENGINEER will not supervise, direct, control, or have authority over or be responsible for CONTRACTOR's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of CONTRACTOR to comply with Laws and Regulations applicable to the performance of the Work. ENGINEER will not be responsible for CONTRACTOR's failure to perform the Work in accordance with the Contract Documents.

C. ENGINEER will not be responsible for the acts or omissions of CONTRACTOR or of any Subcontractor, any Supplier, or of any other individual or entity performing any of the Work.

D. ENGINEER's review of the final Application for Payment and accompanying documentation and all maintenance and operating instructions, schedules, guarantees, Bonds, certificates of inspection, tests and approvals, and other documentation required to be delivered by paragraph 14.07.A will only be to determine generally that their content complies with the requirements of, and in the case of certificates of inspections, tests, and approvals that the results certified indicate compliance with, the Contract Documents.

E. The limitations upon authority and responsibility set forth in this paragraph 9.10 shall also apply to ENGINEER's Consultants, Resident Project Representative, and assistants.

ARTICLE 10 - CHANGES IN THE WORK; CLAIMS

10.01 *Authorized Changes in the Work*

A. Without invalidating the Agreement and without notice to any surety, OWNER may, at any time or from time to time, order additions, deletions, or revisions in the Work by a Written Amendment, a Change Order, or a Work Change Directive. Upon receipt of any such document, CONTRACTOR shall promptly proceed with the Work involved which will be performed under the applicable conditions of the Contract Documents (except as otherwise specifically provided).

B. If OWNER and CONTRACTOR are unable to agree on entitlement to, or on the amount or extent, if any, of an adjustment in the Contract Price or Contract Times, or both, that should be allowed as a result of a Work Change Directive, a Claim may be made therefor as provided in paragraph 10.05.

10.02 *Unauthorized Changes in the Work*

A. CONTRACTOR shall not be entitled to an increase in the Contract Price or an extension of the Contract Times with respect to any work performed that is not required by the Contract Documents as amended, modified, or supplemented as provided in paragraph 3.04, except in the case of an emergency as provided in paragraph 6.16 or in the case of uncovering Work as provided in paragraph 13.04.B.

10.03 *Execution of Change Orders*

A. OWNER and CONTRACTOR shall execute appropriate Change Orders recommended by ENGINEER (or Written Amendments) covering:

1. changes in the Work which are: (i) ordered by OWNER pursuant to paragraph 10.01.A, (ii) required because of acceptance of defective Work under paragraph 13.08.A or OWNER's correction of defective Work

under paragraph 13.09, or (iii) agreed to by the parties;

2. changes in the Contract Price or Contract Times which are agreed to by the parties, including any undisputed sum or amount of time for Work actually performed in accordance with a Work Change Directive; and

3. changes in the Contract Price or Contract Times which embody the substance of any written decision rendered by ENGINEER pursuant to paragraph 10.05; provided that, in lieu of executing any such Change Order, an appeal may be taken from any such decision in accordance with the provisions of the Contract Documents and applicable Laws and Regulations, but during any such appeal, CONTRACTOR shall carry on the Work and adhere to the progress schedule as provided in paragraph 6.18.A.

10.04 *Notification to Surety*

A. If notice of any change affecting the general scope of the Work or the provisions of the Contract Documents (including, but not limited to, Contract Price or Contract Times) is required by the provisions of any Bond to be given to a surety, the giving of any such notice will be CONTRACTOR's responsibility. The amount of each applicable Bond will be adjusted to reflect the effect of any such change.

10.05 *Claims and Disputes*

A. *Notice:* Written notice stating the general nature of each Claim, dispute, or other matter shall be delivered by the claimant to ENGINEER and the other party to the Contract promptly (but in no event later than 30 days) after the start of the event giving rise thereto. Notice of the amount or extent of the Claim, dispute, or other matter with supporting data shall be delivered to the ENGINEER and the other party to the Contract within 60 days after the start of such event (unless ENGINEER allows additional time for claimant to submit additional or more accurate data in support of such

Claim, dispute, or other matter). A Claim for an adjustment in Contract Price shall be prepared in accordance with the provisions of paragraph 12.01.B. A Claim for an adjustment in Contract Time shall be prepared in accordance with the provisions of paragraph 12.02.B. Each Claim shall be accompanied by claimant's written statement that the adjustment claimed is the entire adjustment to which the claimant believes it is entitled as a result of said event. The opposing party shall submit any response to ENGINEER and the claimant within 30 days after receipt of the claimant's last submittal (unless ENGINEER allows additional time).

B. *ENGINEER's Decision:* ENGINEER will render a formal decision in writing within 30 days after receipt of the last submittal of the claimant or the last submittal of the opposing party, if any. ENGINEER's written decision on such Claim, dispute, or other matter will be final and binding upon OWNER and CONTRACTOR unless:

1. an appeal from ENGINEER's decision is taken within the time limits and in accordance with the dispute resolution procedures set forth in Article 16; or

2. if no such dispute resolution procedures have been set forth in Article 16, a written notice of intention to appeal from ENGINEER's written decision is delivered by OWNER or CONTRACTOR to the other and to ENGINEER within 30 days after the date of such decision, and a formal proceeding is instituted by the appealing party in a forum of competent jurisdiction within 60 days after the date of such decision or within 60 days after Substantial Completion, whichever is later (unless otherwise agreed in writing by OWNER and CONTRACTOR), to exercise such rights or remedies as the appealing party may have with respect to such Claim, dispute, or other matter in accordance with applicable Laws and Regulations.

C. If ENGINEER does not render a formal decision in writing within the time stated in

paragraph 10.05.B, a decision denying the Claim in its entirety shall be deemed to have been issued 31 days after receipt of the last submittal of the claimant or the last submittal of the opposing party, if any.

D. No Claim for an adjustment in Contract Price or Contract Times (or Milestones) will be valid if not submitted in accordance with this paragraph 10.05.

ARTICLE 11 - COST OF THE WORK; CASH ALLOWANCES; UNIT PRICE WORK

11.01 *Cost of the Work*

A. *Costs Included:* The term Cost of the Work means the sum of all costs necessarily incurred and paid by CONTRACTOR in the proper performance of the Work. When the value of any Work covered by a Change Order or when a Claim for an adjustment in Contract Price is determined on the basis of Cost of the Work, the costs to be reimbursed to CONTRACTOR will be only those additional or incremental costs required because of the change in the Work or because of the event giving rise to the Claim. Except as otherwise may be agreed to in writing by OWNER, such costs shall be in amounts no higher than those prevailing in the locality of the Project, shall include only the following items, and shall not include any of the costs itemized in paragraph 11.01.B.

1. Payroll costs for employees in the direct employ of CONTRACTOR in the performance of the Work under schedules of job classifications agreed upon by OWNER and CONTRACTOR. Such employees shall include without limitation superintendents, foremen, and other personnel employed full time at the Site. Payroll costs for employees not employed full time on the Work shall be apportioned on the basis of their time spent on the Work. Payroll costs shall include, but not be limited to, salaries and wages plus the cost of fringe benefits, which shall include social security contributions, unemployment,

excise, and payroll taxes, workers' compensation, health and retirement benefits, bonuses, sick leave, vacation and holiday pay applicable thereto. The expenses of performing Work outside of regular working hours, on Saturday, Sunday, or legal holidays, shall be included in the above to the extent authorized by OWNER.

2. Cost of all materials and equipment furnished and incorporated in the Work, including costs of transportation and storage thereof, and Suppliers' field services required in connection therewith. All cash discounts shall accrue to CONTRACTOR unless OWNER deposits funds with CONTRACTOR with which to make payments, in which case the cash discounts shall accrue to OWNER. All trade discounts, rebates and refunds and returns from sale of surplus materials and equipment shall accrue to OWNER, and CONTRACTOR shall make provisions so that they may be obtained.

3. Payments made by CONTRACTOR to Subcontractors for Work performed by Subcontractors. If required by OWNER, CONTRACTOR shall obtain competitive bids from subcontractors acceptable to OWNER and CONTRACTOR and shall deliver such bids to OWNER, who will then determine, with the advice of ENGINEER, which bids, if any, will be acceptable. If any subcontract provides that the Subcontractor is to be paid on the basis of Cost of the Work plus a fee, the Subcontractor's Cost of the Work and fee shall be determined in the same manner as CONTRACTOR's Cost of the Work and fee as provided in this paragraph 11.01.

4. Costs of special consultants (including but not limited to engineers, architects, testing laboratories, surveyors, attorneys, and accountants) employed for services specifically related to the Work.

5. Supplemental costs including the following:

a. The proportion of necessary transportation, travel, and subsistence expenses of CONTRACTOR's employees incurred in discharge of duties connected with the Work.

b. Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office, and temporary facilities at the Site, and hand tools not owned by the workers, which are consumed in the performance of the Work, and cost, less market value, of such items used but not consumed which remain the property of CONTRACTOR.

c. Rentals of all construction equipment and machinery, and the parts thereof whether rented from CONTRACTOR or others in accordance with rental agreements approved by OWNER with the advice of ENGINEER, and the costs of transportation, loading, unloading, assembly, dismantling, and removal thereof. All such costs shall be in accordance with the terms of said rental agreements. The rental of any such equipment, machinery, or parts shall cease when the use thereof is no longer necessary for the Work.

d. Sales, consumer, use, and other similar taxes related to the Work, and for which CONTRACTOR is liable, imposed by Laws and Regulations.

e. Deposits lost for causes other than negligence of CONTRACTOR, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, and royalty payments and fees for permits and licenses.

f. Losses and damages (and related expenses) caused by damage to the Work, not compensated by insurance or otherwise, sustained by CONTRACTOR in connection with the performance of the Work (except losses and damages within the deductible amounts of property insurance established in accordance with paragraph 5.06.D),

provided such losses and damages have resulted from causes other than the negligence of CONTRACTOR, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Such losses shall include settlements made with the written consent and approval of OWNER. No such losses, damages, and expenses shall be included in the Cost of the Work for the purpose of determining CONTRACTOR's fee.

g. The cost of utilities, fuel, and sanitary facilities at the Site.

h. Minor expenses such as telegrams, long distance telephone calls, telephone service at the Site, expressage, and similar petty cash items in connection with the Work.

i. When the Cost of the Work is used to determine the value of a Change Order or of a Claim, the cost of premiums for additional Bonds and insurance required because of the changes in the Work or caused by the event giving rise to the Claim.

j. When all the Work is performed on the basis of cost-plus, the costs of premiums for all Bonds and insurance CONTRACTOR is required by the Contract Documents to purchase and maintain.

B. *Costs Excluded:* The term Cost of the Work shall not include any of the following items:

1. Payroll costs and other compensation of CONTRACTOR's officers, executives, principals (of partnerships and sole proprietorships), general managers, engineers, architects, estimators, attorneys, auditors, accountants, purchasing and contracting agents, expeditors, timekeepers, clerks, and other personnel employed by CONTRACTOR, whether at the Site or in CONTRACTOR's principal or branch office for general administration of the Work and not specifically included in the agreed upon

schedule of job classifications referred to in paragraph 11.01.A.1 or specifically covered by paragraph 11.01.A.4, all of which are to be considered administrative costs covered by the CONTRACTOR's fee.

2. Expenses of CONTRACTOR's principal and branch offices other than CONTRACTOR's office at the Site.

3. Any part of CONTRACTOR's capital expenses, including interest on CONTRACTOR's capital employed for the Work and charges against CONTRACTOR for delinquent payments.

4. Costs due to the negligence of CONTRACTOR, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not limited to, the correction of defective Work, disposal of materials or equipment wrongly supplied, and making good any damage to property.

5. Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in paragraphs 11.01.A and 11.01.B.

C. *CONTRACTOR's Fee:* When all the Work is performed on the basis of cost-plus, CONTRACTOR's fee shall be determined as set forth in the Agreement. When the value of any Work covered by a Change Order or when a Claim for an adjustment in Contract Price is determined on the basis of Cost of the Work, CONTRACTOR's fee shall be determined as set forth in paragraph 12.01.C.

D. *Documentation:* Whenever the Cost of the Work for any purpose is to be determined pursuant to paragraphs 11.01.A and 11.01.B, CONTRACTOR will establish and maintain records thereof in accordance with generally accepted accounting practices and submit in a form acceptable to ENGINEER an itemized cost breakdown together with supporting data.

11.02 *Cash Allowances*

A. It is understood that CONTRACTOR has included in the Contract Price all allowances so named in the Contract Documents and shall cause the Work so covered to be performed for such sums as may be acceptable to OWNER and ENGINEER. CONTRACTOR agrees that:

1. the allowances include the cost to CONTRACTOR (less any applicable trade discounts) of materials and equipment required by the allowances to be delivered at the Site, and all applicable taxes; and

2. CONTRACTOR's costs for unloading and handling on the Site, labor, installation costs, overhead, profit, and other expenses contemplated for the allowances have been included in the Contract Price and not in the allowances, and no demand for additional payment on account of any of the foregoing will be valid.

B. Prior to final payment, an appropriate Change Order will be issued as recommended by ENGINEER to reflect actual amounts due CONTRACTOR on account of Work covered by allowances, and the Contract Price shall be correspondingly adjusted.

11.03 *Unit Price Work*

A. Where the Contract Documents provide that all or part of the Work is to be Unit Price Work, initially the Contract Price will be deemed to include for all Unit Price Work an amount equal to the sum of the unit price for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Agreement. The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Price. Determinations of the actual quantities and classifications of Unit Price Work performed by CONTRACTOR will be made by ENGINEER subject to the provisions of paragraph 9.08.

B. Each unit price will be deemed to include an amount considered by CONTRACTOR to be adequate to cover CONTRACTOR's overhead and profit for each separately identified item.

C. OWNER or CONTRACTOR may make a Claim for an adjustment in the Contract Price in accordance with paragraph 10.05 if:

1. the quantity of any item of Unit Price Work performed by CONTRACTOR differs materially and significantly from the estimated quantity of such item indicated in the Agreement; and

2. there is no corresponding adjustment with respect any other item of Work; and

3. if CONTRACTOR believes that CONTRACTOR is entitled to an increase in Contract Price as a result of having incurred additional expense or OWNER believes that OWNER is entitled to a decrease in Contract Price and the parties are unable to agree as to the amount of any such increase or decrease.

ARTICLE 12 - CHANGE OF CONTRACT PRICE; CHANGE OF CONTRACT TIMES

12.01 *Change of Contract Price*

A. The Contract Price may only be changed by a Change Order or by a Written Amendment. Any Claim for an adjustment in the Contract Price shall be based on written notice submitted by the party making the Claim to the ENGINEER and the other party to the Contract in accordance with the provisions of paragraph 10.05.

B. The value of any Work covered by a Change Order or of any Claim for an adjustment in the Contract Price will be determined as follows:

1. where the Work involved is covered by unit prices contained in the

Contract Documents, by application of such unit prices to the quantities of the items involved (subject to the provisions of paragraph 11.03); or

2. where the Work involved is not covered by unit prices contained in the Contract Documents, by a mutually agreed lump sum (which may include an allowance for overhead and profit not necessarily in accordance with paragraph 12.01.C.2); or

3. where the Work involved is not covered by unit prices contained in the Contract Documents and agreement to a lump sum is not reached under paragraph 12.01.B.2, on the basis of the Cost of the Work (determined as provided in paragraph 11.01) plus a CONTRACTOR's fee for overhead and profit (determined as provided in paragraph 12.01.C).

C. *CONTRACTOR's Fee:* The CONTRACTOR's fee for overhead and profit shall be determined as follows:

1. a mutually acceptable fixed fee; or
2. if a fixed fee is not agreed upon, then a fee based on the following percentages of the various portions of the Cost of the Work:
 - a. for costs incurred under paragraphs 11.01.A.1 and 11.01.A.2, the CONTRACTOR's fee shall be 15 percent;
 - b. for costs incurred under paragraph 11.01.A.3, the CONTRACTOR's fee shall be five percent;
 - c. where one or more tiers of subcontracts are on the basis of Cost of the Work plus a fee and no fixed fee is agreed upon, the intent of paragraph 12.01.C.2.a is that the Subcontractor who actually performs the Work, at whatever tier, will be paid a fee of 15 percent of the costs incurred by such Subcontractor under

paragraphs 11.01.A.1 and 11.01.A.2 and that any higher tier Subcontractor and CONTRACTOR will each be paid a fee of five percent of the amount paid to the next lower tier Subcontractor;

d. no fee shall be payable on the basis of costs itemized under paragraphs 11.01.A.4, 11.01.A.5, and 11.01.B;

e. the amount of credit to be allowed by CONTRACTOR to OWNER for any change which results in a net decrease in cost will be the amount of the actual net decrease in cost plus a deduction in CONTRACTOR's fee by an amount equal to five percent of such net decrease; and

f. when both additions and credits are involved in any one change, the adjustment in CONTRACTOR's fee shall be computed on the basis of the net change in accordance with paragraphs 12.01.C.2.a through 12.01.C.2.e, inclusive.

12.02 *Change of Contract Times*

A. The Contract Times (or Milestones) may only be changed by a Change Order or by a Written Amendment. Any Claim for an adjustment in the Contract Times (or Milestones) shall be based on written notice submitted by the party making the claim to the ENGINEER and the other party to the Contract in accordance with the provisions of paragraph 10.05.

B. Any adjustment of the Contract Times (or Milestones) covered by a Change Order or of any Claim for an adjustment in the Contract Times (or Milestones) will be determined in accordance with the provisions of this Article 12.

12.03 *Delays Beyond CONTRACTOR's Control*

~~A. Where CONTRACTOR is prevented from completing any part of the Work within the Contract Times (or Milestones) due to delay beyond the control of CONTRACTOR, the Contract~~

~~Times (or Milestones) will be extended in an amount equal to the time lost due to such delay if a Claim is made therefor as provided in paragraph 12.02.A. Delays beyond the control of CONTRACTOR shall include, but not be limited to, acts or neglect by OWNER, acts or neglect of utility owners or other contractors performing other work as contemplated by Article 7, fires, floods, epidemics, abnormal weather conditions, or acts of God.~~

Typical adverse weather conditions and neglect of utility owner or other contractors shall not be deemed a consideration for the extension of the contract time.

12.04 *Delays Within CONTRACTOR's Control*

A. The Contract Times (or Milestones) will not be extended due to delays within the control of CONTRACTOR. Delays attributable to and within the control of a Subcontractor or Supplier shall be deemed to be delays within the control of CONTRACTOR.

12.05 *Delays Beyond OWNER's and CONTRACTOR's Control*

A. Where CONTRACTOR is prevented from completing any part of the Work within the Contract Times (or Milestones) due to delay beyond the control of both OWNER and CONTRACTOR, an extension of the Contract Times (or Milestones) in an amount equal to the time lost due to such delay shall be CONTRACTOR's sole and exclusive remedy for such delay.

12.06 *Delay Damages*

A. In no event shall OWNER or ENGINEER be liable to CONTRACTOR, any Subcontractor, any Supplier, or any other person or organization, or to any surety for or employee or agent of any of them, for damages arising out of or resulting from:

1. delays caused by or within the control of CONTRACTOR; or

2. delays beyond the control of both OWNER and CONTRACTOR including but not limited to fires, floods, epidemics, abnormal weather conditions, acts of God, or acts or neglect by utility owners or other contractors performing other work as contemplated by Article 7.

B. Nothing in this paragraph 12.06 bars a change in Contract Price pursuant to this Article 12 to compensate CONTRACTOR due to delay, interference, or disruption directly attributable to actions or inactions of OWNER or anyone for whom OWNER is responsible.

ARTICLE 13 - TESTS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK

13.01 *Notice of Defects*

A. Prompt notice of all defective Work of which OWNER or ENGINEER has actual knowledge will be given to CONTRACTOR. All defective Work may be rejected, corrected, or accepted as provided in this Article 13.

13.02 *Access to Work*

A. OWNER, ENGINEER, ENGINEER's Consultants, other representatives and personnel of OWNER, independent testing laboratories, and governmental agencies with jurisdictional interests will have access to the Site and the Work at reasonable times for their observation, inspecting, and testing. CONTRACTOR shall provide them proper and safe conditions for such access and advise them of CONTRACTOR's Site safety procedures and programs so that they may comply therewith as applicable.

13.03 *Tests and Inspections*

A. CONTRACTOR shall give ENGINEER timely notice of readiness of the Work for all required inspections, tests, or approvals and shall cooperate

with inspection and testing personnel to facilitate required inspections or tests.

B. OWNER shall employ and pay for the services of an independent testing laboratory to perform all inspections, tests, or approvals required by the Contract Documents except:

1. for inspections, tests, or approvals covered by paragraphs 13.03.C and 13.03.D below;
2. that costs incurred in connection with tests or inspections conducted pursuant to paragraph 13.04.B shall be paid as provided in said paragraph 13.04.B; and
3. as otherwise specifically provided in the Contract Documents.

C. If Laws or Regulations of any public body having jurisdiction require any Work (or part thereof) specifically to be inspected, tested, or approved by an employee or other representative of such public body, CONTRACTOR shall assume full responsibility for arranging and obtaining such inspections, tests, or approvals, pay all costs in connection therewith, and furnish ENGINEER the required certificates of inspection or approval.

D. CONTRACTOR shall be responsible for arranging and obtaining and shall pay all costs in connection with any inspections, tests, or approvals required for OWNER's and ENGINEER's acceptance of materials or equipment to be incorporated in the Work; or acceptance of materials, mix designs, or equipment submitted for approval prior to CONTRACTOR's purchase thereof for incorporation in the Work. Such inspections, tests, or approvals shall be performed by organizations acceptable to OWNER and ENGINEER.

E. If any Work (or the work of others) that is to be inspected, tested, or approved is covered by CONTRACTOR without written concurrence of ENGINEER, it must, if requested by ENGINEER, be uncovered for observation.

F. Uncovering Work as provided in paragraph 13.03.E shall be at CONTRACTOR's expense unless CONTRACTOR has given ENGINEER timely notice of CONTRACTOR's intention to cover the same and ENGINEER has not acted with reasonable promptness in response to such notice.

13.04 *Uncovering Work*

A. If any Work is covered contrary to the written request of ENGINEER, it must, if requested by ENGINEER, be uncovered for ENGINEER's observation and replaced at CONTRACTOR's expense.

B. If ENGINEER considers it necessary or advisable that covered Work be observed by ENGINEER or inspected or tested by others, CONTRACTOR, at ENGINEER's request, shall uncover, expose, or otherwise make available for observation, inspection, or testing as ENGINEER may require, that portion of the Work in question, furnishing all necessary labor, material, and equipment. If it is found that such Work is defective, CONTRACTOR shall pay all Claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such uncovering, exposure, observation, inspection, and testing, and of satisfactory replacement or reconstruction (including but not limited to all costs of repair or replacement of work of others); and OWNER shall be entitled to an appropriate decrease in the Contract Price. If the parties are unable to agree as to the amount thereof, OWNER may make a Claim therefor as provided in paragraph 10.05. If, however, such Work is not found to be defective, CONTRACTOR shall be allowed an increase in the Contract Price or an extension of the Contract Times (or Milestones), or both, directly attributable to such uncovering, exposure, observation, inspection, testing, replacement, and reconstruction. If the parties are unable to agree as to the amount or extent thereof, CONTRACTOR may make a Claim therefor as provided in paragraph 10.05.

13.05 *OWNER May Stop the Work*

A. If the Work is defective, or CONTRACTOR fails to supply sufficient skilled workers or suitable materials or equipment, or fails to perform the Work in such a way that the completed Work will conform to the Contract Documents, OWNER may order CONTRACTOR to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, this right of OWNER to stop the Work shall not give rise to any duty on the part of OWNER to exercise this right for the benefit of CONTRACTOR, any Subcontractor, any Supplier, any other individual or entity, or any surety for, or employee or agent of any of them.

13.06 *Correction or Removal of Defective Work*

A. CONTRACTOR shall correct all defective Work, whether or not fabricated, installed, or completed, or, if the Work has been rejected by ENGINEER, remove it from the Project and replace it with Work that is not defective. CONTRACTOR shall pay all Claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or removal (including but not limited to all costs of repair or replacement of work of others).

13.07 *Correction Period*

A. If within one year after the date of Substantial Completion or such longer period of time as may be prescribed by Laws or Regulations or by the terms of any applicable special guarantee required by the Contract Documents or by any specific provision of the Contract Documents, any Work is found to be defective, or if the repair of any damages to the land or areas made available for CONTRACTOR's use by OWNER or permitted by Laws and Regulations as contemplated in paragraph 6.11.A is found to be defective, CONTRACTOR shall promptly, without cost to OWNER and in accordance with OWNER's written instructions: (i) repair such defective land or areas, or (ii) correct such defective Work or, if the defective Work has been rejected by OWNER,

remove it from the Project and replace it with Work that is not defective, and (iii) satisfactorily correct or repair or remove and replace any damage to other Work, to the work of others or other land or areas resulting therefrom. If CONTRACTOR does not promptly comply with the terms of such instructions, or in an emergency where delay would cause serious risk of loss or damage, OWNER may have the defective Work corrected or repaired or may have the rejected Work removed and replaced, and all Claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or repair or such removal and replacement (including but not limited to all costs of repair or replacement of work of others) will be paid by CONTRACTOR.

B. In special circumstances where a particular item of equipment is placed in continuous service before Substantial Completion of all the Work, the correction period for that item may start to run from an earlier date if so provided in the Specifications or by Written Amendment.

C. Where defective Work (and damage to other Work resulting therefrom) has been corrected or removed and replaced under this paragraph 13.07, the correction period hereunder with respect to such Work will be extended for an additional period of one year after such correction or removal and replacement has been satisfactorily completed.

D. CONTRACTOR's obligations under this paragraph 13.07 are in addition to any other obligation or warranty. The provisions of this paragraph 13.07 shall not be construed as a substitute for or a waiver of the provisions of any applicable statute of limitation or repose.

13.08 *Acceptance of Defective Work*

A. If, instead of requiring correction or removal and replacement of defective Work, OWNER (and, prior to ENGINEER's recommendation of final payment, ENGINEER) prefers to accept it, OWNER

may do so. CONTRACTOR shall pay all Claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) attributable to OWNER's evaluation of and determination to accept such defective Work (such costs to be approved by ENGINEER as to reasonableness) and the diminished value of the Work to the extent not otherwise paid by CONTRACTOR pursuant to this sentence. If any such acceptance occurs prior to ENGINEER's recommendation of final payment, a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work, and OWNER shall be entitled to an appropriate decrease in the Contract Price, reflecting the diminished value of Work so accepted. If the parties are unable to agree as to the amount thereof, OWNER may make a Claim therefor as provided in paragraph 10.05. If the acceptance occurs after such recommendation, an appropriate amount will be paid by CONTRACTOR to OWNER.

13.09 *OWNER May Correct Defective Work*

A. If CONTRACTOR fails within a reasonable time after written notice from ENGINEER to correct defective Work or to remove and replace rejected Work as required by ENGINEER in accordance with paragraph 13.06.A, or if CONTRACTOR fails to perform the Work in accordance with the Contract Documents, or if CONTRACTOR fails to comply with any other provision of the Contract Documents, OWNER may, after seven days written notice to CONTRACTOR, correct and remedy any such deficiency.

B. In exercising the rights and remedies under this paragraph, OWNER shall proceed expeditiously. In connection with such corrective and remedial action, OWNER may exclude CONTRACTOR from all or part of the Site, take possession of all or part of the Work and suspend CONTRACTOR's services related thereto, take possession of CONTRACTOR's tools, appliances, construction equipment and machinery at the Site, and incorporate in the Work all materials and equipment stored at the Site or for which OWNER has paid

CONTRACTOR but which are stored elsewhere. CONTRACTOR shall allow OWNER, OWNER's representatives, agents and employees, OWNER's other contractors, and ENGINEER and ENGINEER's Consultants access to the Site to enable OWNER to exercise the rights and remedies under this paragraph.

C. All Claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) incurred or sustained by OWNER in exercising the rights and remedies under this paragraph 13.09 will be charged against CONTRACTOR, and a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work; and OWNER shall be entitled to an appropriate decrease in the Contract Price. If the parties are unable to agree as to the amount of the adjustment, OWNER may make a Claim therefor as provided in paragraph 10.05. Such claims, costs, losses and damages will include but not be limited to all costs of repair, or replacement of work of others destroyed or damaged by correction, removal, or replacement of CONTRACTOR's defective Work.

D. CONTRACTOR shall not be allowed an extension of the Contract Times (or Milestones) because of any delay in the performance of the Work attributable to the exercise by OWNER of OWNER's rights and remedies under this paragraph 13.09.

ARTICLE 14 - PAYMENTS TO CONTRACTOR AND COMPLETION

14.01 *Schedule of Values*

A. The schedule of values established as provided in paragraph 2.07.A will serve as the basis for progress payments and will be incorporated into a form of Application for Payment acceptable to ENGINEER. Progress payments on account of Unit Price Work will be based on the number of units completed.

14.02 *Progress Payments*

A. *Applications for Payments*

1. At least 20 days before the date established for each progress payment (but not more often than once a month), CONTRACTOR shall submit to ENGINEER for review an Application for Payment filled out and signed by CONTRACTOR covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at the Site or at another location agreed to in writing, the Application for Payment shall also be accompanied by a bill of sale, invoice, or other documentation warranting that OWNER has received the materials and equipment free and clear of all Liens and evidence that the materials and equipment are covered by appropriate property insurance or other arrangements to protect OWNER's interest therein, all of which must be satisfactory to OWNER.

2. Beginning with the second Application for Payment, each Application shall include an affidavit of CONTRACTOR stating that all previous progress payments received on account of the Work have been applied on account to discharge CONTRACTOR's legitimate obligations associated with prior Applications for Payment.

3. The amount of retainage with respect to progress payments will be as stipulated in the Agreement.

B. *Review of Applications*

1. ENGINEER will, within 10 days after receipt of each Application for Payment, either indicate in writing a recommendation

of payment and present the Application to OWNER or return the Application to CONTRACTOR indicating in writing ENGINEER's reasons for refusing to recommend payment. In the latter case, CONTRACTOR may make the necessary corrections and resubmit the Application.

2. ENGINEER's recommendation of any payment requested in an Application for Payment will constitute a representation by ENGINEER to OWNER, based on ENGINEER's observations on the Site of the executed Work as an experienced and qualified design professional and on ENGINEER's review of the Application for Payment and the accompanying data and schedules, that to the best of ENGINEER's knowledge, information and belief:

a. the Work has progressed to the point indicated;

b. the quality of the Work is generally in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning whole prior to or upon Substantial Completion, to the results of any subsequent tests called for in the Contract Documents, to a final determination of quantities and classifications for Unit Price Work under paragraph 9.08, and to any other qualifications stated in the recommendation); and

c. the conditions precedent to CONTRACTOR's being entitled to such payment appear to have been fulfilled in so far as it is ENGINEER's responsibility to observe the Work.

3. By recommending any such payment ENGINEER will not thereby be deemed to have represented that: (i) inspections made to check the quality or the quantity of the Work as it has been performed have been exhaustive, extended to every aspect of the Work in progress, or

involved detailed inspections of the Work beyond the responsibilities specifically assigned to ENGINEER in the Contract Documents; or (ii) that there may not be other matters or issues between the parties that might entitle CONTRACTOR to be paid additionally by OWNER or entitle OWNER to withhold payment to CONTRACTOR.

4. Neither ENGINEER's review of CONTRACTOR's Work for the purposes of recommending payments nor ENGINEER's recommendation of any payment, including final payment, will impose responsibility on ENGINEER to supervise, direct, or control the Work or for the means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for CONTRACTOR's failure to comply with Laws and Regulations applicable to CONTRACTOR's performance of the Work. Additionally, said review or recommendation will not impose responsibility on ENGINEER to make any examination to ascertain how or for what purposes CONTRACTOR has used the moneys paid on account of the Contract Price, or to determine that title to any of the Work, materials, or equipment has passed to OWNER free and clear of any Liens.

5. ENGINEER may refuse to recommend the whole or any part of any payment if, in ENGINEER's opinion, it would be incorrect to make the representations to OWNER referred to in paragraph 14.02.B.2. ENGINEER may also refuse to recommend any such payment or, because of subsequently discovered evidence or the results of subsequent inspections or tests, revise or revoke any such payment recommendation previously made, to such extent as may be necessary in ENGINEER's opinion to protect OWNER from loss because:

a. the Work is defective, or completed Work has been damaged, requiring correction or replacement;

b. the Contract Price has been reduced by Written Amendment or Change Orders;

c. OWNER has been required to correct defective Work or complete Work in accordance with paragraph 13.09; or

d. ENGINEER has actual knowledge of the occurrence of any of the events enumerated in paragraph 15.02.A. See Supplemental Conditions regarding Liquidated Damages and Other Consequences for Failure.

C. *Payment Becomes Due*

1. Ten days after presentation of the Application for Payment to OWNER with ENGINEER's recommendation, the amount recommended will (subject to the provisions of paragraph 14.02.D) become due, and when due will be paid by OWNER to CONTRACTOR.

D. *Reduction in Payment*

1. OWNER may refuse to make payment of the full amount recommended by ENGINEER because:

a. claims have been made against OWNER on account of CONTRACTOR's performance or furnishing of the Work;

b. Liens have been filed in connection with the Work, except where CONTRACTOR has delivered a specific Bond satisfactory to OWNER to secure the satisfaction and discharge of such Liens;

c. there are other items entitling OWNER to a set-off against the amount recommended; or

d. OWNER has actual knowledge of the occurrence of any of the events enumerated in paragraphs 14.02.B.5.a

through 14.02.B.5.c or paragraph 15.02.A. See Supplemental Conditions regarding Liquidated Damages and Other Consequences for Failure.

2. If OWNER refuses to make payment of the full amount recommended by ENGINEER, OWNER must give CONTRACTOR immediate written notice (with a copy to ENGINEER) stating the reasons for such action and promptly pay CONTRACTOR any amount remaining after deduction of the amount so withheld. OWNER shall promptly pay CONTRACTOR the amount so withheld, or any adjustment thereto agreed to by OWNER and CONTRACTOR, when CONTRACTOR corrects to OWNER's satisfaction the reasons for such action.

3. If it is subsequently determined that OWNER's refusal of payment was not justified, the amount wrongfully withheld shall be treated as an amount due as determined by paragraph 14.02.C.1.

14.03 *CONTRACTOR's Warranty of Title*

A. CONTRACTOR warrants and guarantees that title to all Work, materials, and equipment covered by any Application for Payment, whether incorporated in the Project or not, will pass to OWNER no later than the time of payment free and clear of all Liens.

14.04 *Substantial Completion*

A. When CONTRACTOR considers the entire Work ready for its intended use CONTRACTOR shall notify OWNER and ENGINEER in writing that the entire Work is substantially complete (except for items specifically listed by CONTRACTOR as incomplete) and request that ENGINEER issue a certificate of Substantial Completion. Promptly thereafter, OWNER, CONTRACTOR, and ENGINEER shall make an inspection of the Work to determine the status of completion. If ENGINEER does not consider the Work substantially complete, ENGINEER will notify CONTRACTOR in writing giving

the reasons therefor. If ENGINEER considers the Work substantially complete, ENGINEER will prepare and deliver to OWNER a tentative certificate of Substantial Completion which shall fix the date of Substantial Completion. There shall be attached to the certificate a tentative list of items to be completed or corrected before final payment. OWNER shall have seven days after receipt of the tentative certificate during which to make written objection to ENGINEER as to any provisions of the certificate or attached list. If, after considering such objections, ENGINEER concludes that the Work is not substantially complete, ENGINEER will within 14 days after submission of the tentative certificate to OWNER notify CONTRACTOR in writing, stating the reasons therefor. If, after consideration of OWNER's objections, ENGINEER considers the Work substantially complete, ENGINEER will within said 14 days execute and deliver to OWNER and CONTRACTOR a definitive certificate of Substantial Completion (with a revised tentative list of items to be completed or corrected) reflecting such changes from the tentative certificate as ENGINEER believes justified after consideration of any objections from OWNER. At the time of delivery of the tentative certificate of Substantial Completion ENGINEER will deliver to OWNER and CONTRACTOR a written recommendation as to division of responsibilities pending final payment between OWNER and CONTRACTOR with respect to security, operation, safety, and protection of the Work, maintenance, heat, utilities, insurance, and warranties and guarantees. Unless OWNER and CONTRACTOR agree otherwise in writing and so inform ENGINEER in writing prior to ENGINEER's issuing the definitive certificate of Substantial Completion, ENGINEER's aforesaid recommendation will be binding on OWNER and CONTRACTOR until final payment.

B. OWNER shall have the right to exclude CONTRACTOR from the Site after the date of Substantial Completion, but OWNER shall allow CONTRACTOR reasonable access to complete or correct items on the tentative list.

14.05 *Partial Utilization*

A. Use by OWNER at OWNER's option of any substantially completed part of the Work which has specifically been identified in the Contract Documents, or which OWNER, ENGINEER, and CONTRACTOR agree constitutes a separately functioning and usable part of the Work that can be used by OWNER for its intended purpose without significant interference with CONTRACTOR's performance of the remainder of the Work, may be accomplished prior to Substantial Completion of all the Work subject to the following conditions.

1. OWNER at any time may request CONTRACTOR in writing to permit OWNER to use any such part of the Work which OWNER believes to be ready for its intended use and substantially complete. If CONTRACTOR agrees that such part of the Work is substantially complete, CONTRACTOR will certify to OWNER and ENGINEER that such part of the Work is substantially complete and request ENGINEER to issue a certificate of Substantial Completion for that part of the Work. CONTRACTOR at any time may notify OWNER and ENGINEER in writing that CONTRACTOR considers any such part of the Work ready for its intended use and substantially complete and request ENGINEER to issue a certificate of Substantial Completion for that part of the Work. Within a reasonable time after either such request, OWNER, CONTRACTOR, and ENGINEER shall make an inspection of that part of the Work to determine its status of completion. If ENGINEER does not consider that part of the Work to be substantially complete, ENGINEER will notify OWNER and CONTRACTOR in writing giving the reasons therefor. If ENGINEER considers that part of the Work to be substantially complete, the provisions of paragraph 14.04 will apply with respect to certification of Substantial Completion of that part of the Work and the division of responsibility in respect thereof and access thereto.

2. No occupancy or separate operation of part of the Work may occur prior to compliance with the requirements of

paragraph 5.10 regarding property insurance.

14.06 *Final Inspection*

A. Upon written notice from CONTRACTOR that the entire Work or an agreed portion thereof is complete, ENGINEER will promptly make a final inspection with OWNER and CONTRACTOR and will notify CONTRACTOR in writing of all particulars in which this inspection reveals that the Work is incomplete or defective. CONTRACTOR shall immediately take such measures as are necessary to complete such Work or remedy such deficiencies.

14.07 *Final Payment*

A. *Application for Payment*

1. After CONTRACTOR has, in the opinion of ENGINEER, satisfactorily completed all corrections identified during the final inspection and has delivered, in accordance with the Contract Documents, all maintenance and operating instructions, schedules, guarantees, Bonds, certificates or other evidence of insurance certificates of inspection, marked-up record documents (as provided in paragraph 6.12), and other documents, CONTRACTOR may make application for final payment following the procedure for progress payments.

2. The final Application for Payment shall be accompanied (except as previously delivered) by: (i) all documentation called for in the Contract Documents, including but not limited to the evidence of insurance required by subparagraph 5.04.B.7; (ii) consent of the surety, if any, to final payment; and (iii) complete and legally effective releases or waivers (satisfactory to OWNER) of all Lien rights arising out of or Liens filed in connection with the Work.

3. In lieu of the releases or waivers of Liens specified in paragraph 14.07.A.2 and as approved by OWNER, CONTRACTOR may

furnish receipts or releases in full and an affidavit of CONTRACTOR that: (i) the releases and receipts include all labor, services, material, and equipment for which a Lien could be filed; and (ii) all payrolls, material and equipment bills, and other indebtedness connected with the Work for which OWNER or OWNER's property might in any way be responsible have been paid or otherwise satisfied. If any Subcontractor or Supplier fails to furnish such a release or receipt in full, CONTRACTOR may furnish a Bond or other collateral satisfactory to OWNER to indemnify OWNER against any Lien.

B. *Review of Application and Acceptance*

1. If, on the basis of ENGINEER's observation of the Work during construction and final inspection, and ENGINEER's review of the final Application for Payment and accompanying documentation as required by the Contract Documents, ENGINEER is satisfied that the Work has been completed and CONTRACTOR's other obligations under the Contract Documents have been fulfilled, ENGINEER will, within ten days after receipt of the final Application for Payment, indicate in writing ENGINEER's recommendation of payment and present the Application for Payment to OWNER for payment. At the same time ENGINEER will also give written notice to OWNER and CONTRACTOR that the Work is acceptable subject to the provisions of paragraph 14.09. Otherwise, ENGINEER will return the Application for Payment to CONTRACTOR, indicating in writing the reasons for refusing to recommend final payment, in which case CONTRACTOR shall make the necessary corrections and resubmit the Application for Payment.

C. *Payment Becomes Due*

1. Thirty days after the presentation to OWNER of the Application for Payment and accompanying documentation, the amount recommended by ENGINEER will

become due and, when due, will be paid by OWNER to CONTRACTOR.

14.08 *Final Completion Delayed*

A. If, through no fault of CONTRACTOR, final completion of the Work is significantly delayed, and if ENGINEER so confirms, OWNER shall, upon receipt of CONTRACTOR's final Application for Payment and recommendation of ENGINEER, and without terminating the Agreement, make payment of the balance due for that portion of the Work fully completed and accepted. If the remaining balance to be held by OWNER for Work not fully completed or corrected is less than the retainage stipulated in the Agreement, and if Bonds have been furnished as required in paragraph 5.01, the written consent of the surety to the payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by CONTRACTOR to ENGINEER with the Application for such payment. Such payment shall be made under the terms and conditions governing final payment, except that it shall not constitute a waiver of Claims.

14.09 *Waiver of Claims*

A. The making and acceptance of final payment will constitute:

1. a waiver of all Claims by OWNER against CONTRACTOR, except Claims arising from unsettled Liens, from defective Work appearing after final inspection pursuant to paragraph 14.06, from failure to comply with the Contract Documents or the terms of any special guarantees specified therein, or from CONTRACTOR's continuing obligations under the Contract Documents; and

2. a waiver of all Claims by CONTRACTOR against OWNER other than those previously made in writing which are still unsettled.

ARTICLE 15 - SUSPENSION OF WORK AND TERMINATION

15.01 OWNER May Suspend Work

A. At any time and without cause, OWNER may suspend the Work or any portion thereof for a period of not more than 90 consecutive days by notice in writing to CONTRACTOR and ENGINEER which will fix the date on which Work will be resumed. CONTRACTOR shall resume the Work on the date so fixed. CONTRACTOR shall be allowed an adjustment in the Contract Price or an extension of the Contract Times, or both, directly attributable to any such suspension if CONTRACTOR makes a Claim therefor as provided in paragraph 10.05.

15.02 OWNER May Terminate for Cause

A. The occurrence of any one or more of the following events will justify termination for cause:

1. CONTRACTOR's persistent failure to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable materials or equipment or failure to adhere to the progress schedule established under paragraph 2.07 as adjusted from time to time pursuant to paragraph 6.04);

2. CONTRACTOR's disregard of Laws or Regulations of any public body having jurisdiction;

3. CONTRACTOR's disregard of the authority of ENGINEER; or

4. CONTRACTOR's violation in any substantial way of any provisions of the Contract Documents.

B. If one or more of the events identified in paragraph 15.02.A occur, OWNER may, after giving CONTRACTOR (and the surety, if any) seven days written notice, terminate the services of CONTRACTOR, exclude CONTRACTOR from the Site, and take possession of the Work and of all CONTRACTOR's tools, appliances, construction

equipment, and machinery at the Site, and use the same to the full extent they could be used by CONTRACTOR (without liability to CONTRACTOR for trespass or conversion), incorporate in the Work all materials and equipment stored at the Site or for which OWNER has paid CONTRACTOR but which are stored elsewhere, and finish the Work as OWNER may deem expedient. In such case, CONTRACTOR shall not be entitled to receive any further payment until the Work is finished. If the unpaid balance of the Contract Price exceeds all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by OWNER arising out of or relating to completing the Work, such excess will be paid to CONTRACTOR. If such claims, costs, losses, and damages exceed such unpaid balance, CONTRACTOR shall pay the difference to OWNER. Such claims, costs, losses, and damages incurred by OWNER will be reviewed by ENGINEER as to their reasonableness and, when so approved by ENGINEER, incorporated in a Change Order. When exercising any rights or remedies under this paragraph OWNER shall not be required to obtain the lowest price for the Work performed.

C. Where CONTRACTOR's services have been so terminated by OWNER, the termination will not affect any rights or remedies of OWNER against CONTRACTOR then existing or which may thereafter accrue. Any retention or payment of moneys due CONTRACTOR by OWNER will not release CONTRACTOR from liability.

15.03 OWNER May Terminate For Convenience

A. Upon seven days written notice to CONTRACTOR and ENGINEER, OWNER may, without cause and without prejudice to any other right or remedy of OWNER, elect to terminate the Contract. In such case, CONTRACTOR shall be paid (without duplication of any items):

1. for completed and acceptable Work executed in accordance with the Contract Documents prior to the effective date of termination, including fair and

reasonable sums for overhead and profit on such Work;

2. for expenses sustained prior to the effective date of termination in performing services and furnishing labor, materials, or equipment as required by the Contract Documents in connection with uncompleted Work, plus fair and reasonable sums for overhead and profit on such expenses;

3. for all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) incurred in settlement of terminated contracts with Subcontractors, Suppliers, and others; and

4. for reasonable expenses directly attributable to termination.

B. CONTRACTOR shall not be paid on account of loss of anticipated profits or revenue or other economic loss arising out of or resulting from such termination.

15.04 *CONTRACTOR May Stop Work or Terminate*

A. If, through no act or fault of CONTRACTOR, the Work is suspended for more than 90 consecutive days by OWNER or under an order of court or other public authority, or ENGINEER fails to act on any Application for Payment within 30 days after it is submitted, or OWNER fails for 30 days to pay CONTRACTOR any sum finally determined to be due, then CONTRACTOR may, upon seven days written notice to OWNER and ENGINEER, and provided OWNER or ENGINEER do not remedy such suspension or failure within that time, terminate the Contract and recover from OWNER payment on the same terms as provided in paragraph 15.03. In lieu of terminating the Contract and without prejudice to any other right or remedy, if ENGINEER has failed to act on an Application for Payment within 30 days after it is submitted, or OWNER has failed for 30 days to pay CONTRACTOR any sum

finally determined to be due, CONTRACTOR may, seven days after written notice to OWNER and ENGINEER, stop the Work until payment is made of all such amounts due CONTRACTOR, including interest thereon. The provisions of this paragraph 15.04 are not intended to preclude CONTRACTOR from making a Claim under paragraph 10.05 for an adjustment in Contract Price or Contract Times or otherwise for expenses or damage directly attributable to CONTRACTOR's stopping the Work as permitted by this paragraph.

ARTICLE 16 - DISPUTE RESOLUTION

16.01 *Methods and Procedures*

A. Dispute resolution methods and procedures, if any, shall be as set forth in the Supplementary Conditions. If no method and procedure has been set forth, and subject to the provisions of paragraphs 9.09 and 10.05, OWNER and CONTRACTOR may exercise such rights or remedies as either may otherwise have under the Contract Documents or by Laws or Regulations in respect of any dispute.

ARTICLE 17 - MISCELLANEOUS

17.01 *Giving Notice*

A. Whenever any provision of the Contract Documents requires the giving of written notice, it will be deemed to have been validly given if delivered in person to the individual or to a member of the firm or to an officer of the corporation for whom it is intended, or if delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to the giver of the notice.

17.02 *Computation of Times*

A. When any period of time is referred to in the Contract Documents by days, it will be computed to exclude the first and include the last day of

such period. If the last day of any such period falls on a Saturday or Sunday or on a day made a legal holiday by the law of the applicable jurisdiction, such day will be omitted from the computation.

17.03 *Cumulative Remedies*

A. The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto are in addition to, and are not to be construed in any way as a limitation of, any rights and remedies available to any or all of them which are otherwise imposed or available by Laws or Regulations, by special warranty or guarantee, or by other provisions of the Contract Documents, and the provisions of this paragraph will be as effective as if repeated specifically in the Contract Documents in

connection with each particular duty, obligation, right, and remedy to which they apply.

17.04 *Survival of Obligations*

A. All representations, indemnifications, warranties, and guarantees made in, required by, or given in accordance with the Contract Documents, as well as all continuing obligations indicated in the Contract Documents, will survive final payment, completion, and acceptance of the Work or termination or completion of the Agreement.

17.05 *Controlling Law*

A. This Contract is to be governed by the law of the state in which the Project is located.

SUPPLEMENTARY CONDITIONS

1. Project Description.

- A. The project includes improvements to the 2 existing concessions buildings at the Barfield Crescent Park in Murfreesboro, TN. The work includes the addition of HVAC systems, duct work and all electrical requirements, concrete and fencing on the exterior of the buildings, the installation of air curtains, the installation of a grill and hood, and the installation of a grease removal system as shown on the plans and listed in the contract documents.
- B. The work shall consist of furnishing all materials, supplies, and equipment; performing all labor and services incidental to, or necessary for, the complete construction of the project in accordance with the plans and specifications; and the maintenance of each completed portion of the work until final acceptance of the entire project by the Owner.

2. Project Construction. The project will be constructed under a "unit price" contract.

3. Contractor's or Subcontractor's Insurance. The Contractor shall not commence work under this contract until he has obtained all the insurance required under this paragraph and such insurance has been approved by the Owner, nor shall the Contractor allow any subcontractor to commence work on his subcontract until all similar insurance required of the subcontractor has been obtained and approved.

- A. The limits of liability for the insurance required by paragraph 5.04 of the General Conditions shall provide coverage for not less than the following amounts or greater where required by Laws and Regulations:

- i. Workers Compensation, and related coverages under paragraphs 5.04.A.1 and A.2 of the General Conditions:

a.	State:	Statutory
b.	Applicable Federal:	Statutory
c.	Employers Liability	
	Ea. Accident	\$100,000
	Disease – Policy Limit	\$500,000
	Disease – Ea. Employee	\$100,000

- ii. CONTRACTOR'S General Liability under paragraphs 5.04.A.3 through A.6 of the General Conditions which shall include completed operations and product liability coverages and eliminates the exclusion with respect to property under the care, custody and control of the CONTRACTOR:

a.	General Aggregate	\$2,000,000
b.	Products – Completed Operations Agg.	\$2,000,000
c.	Personal and Advertising Injury	\$1,000,000
d.	Each Occurrence (Bodily Injury and Property Damage)	\$1,000,000
e.	Fire Damage (any one fire)	\$50,000
f.	Medical Expense (any one expense)	\$5,000

- g. Property Damage liability insurance will provide Explosion, Collapse, and Underground coverages where applicable
- h. Excess or Umbrella Liability

General Aggregate	\$2,000,000
Each Occurrence	\$2,000,000
- iii. Automobile Liability under paragraph 5.04.A.6 of the General Conditions
 - a. Bodily Injury

Each Person	\$1,000,000
Each Accident	\$1,000,000
 - b. Property Damage

Each Accident	\$1,000,000
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 - c. Combined Single Limit of

	\$1,000,000
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- iv. The Contractual Liability coverage required by paragraph 5.04.B.4 of the General Conditions shall provide coverage for not less than the following amounts:
 - a. Bodily Injury

Each Accident	\$1,000,000
Annual Aggregate	\$1,000,000
 - b. Property Damage:

Each Accident	\$1,000,000
Annual Aggregate	\$1,000,000
- v. The following shall be included as additional insured parties on CONTRACTOR'S liability policies:
 - a. City of Murfreesboro, TN – OWNER
 - b. Wiser Consultants, LLC – ENGINEER

4. Section 5.06 of the General Conditions is voided for this contract.

5. Contract Plans.

The work shall be performed in accordance with the specifications and contract plans, which are incorporated herein, the limits shown on the plans as being included in the unit price contract or contracts.

6. Utility Service.

The Contractor shall provide and maintain at his own expense any water, electric, or other utility service used in the construction of the work.

7. Pre-Blast Survey.

- A. In the event that the Contractor must perform any blasting during construction operations, the Contractor shall be responsible for conducting his own pre-blast survey at no cost to the Owner.

- B. Appropriate seismic recording devices shall be in place at areas of concern or placed in areas as directed by the Engineer or Owner to monitor the magnitude of the blasting charges.
8. **List of Proposed Subcontractors** – The CONTRACTOR shall submit a list of proposed subcontractors within five days after Bid opening. The items of work shall consist of, but not be limited to:
- Pre-Blast Survey
 - Drilling and Blasting Operations
 - Excavating/Earth moving
 - Roadway Construction
 - Paving/Pavement Restoration
 - Electric/Communications conduit installation
 - Installation of utilities including, but not limited to, pipe, fittings, and appurtenances
 - Irrigation
 - Landscaping
9. **Coordination with Other Contractors.** It shall be the responsibility of the Contractor to coordinate other contractors working in the area, and any construction activities whereby access must be provided to the proposed construction.
- A. Should CONTRACTOR cause damage to the work or property of any separate contractor at the Site, or should any claim arising out of the CONTRACTOR's performance of the Work at the Site be made by any separate contractor against CONTRACTOR, OWNER, ENGINEER, ENGINEER's Consultants, or the construction coordinator, CONTRACTOR shall promptly attempt to settle with such separate contractor by agreement, or to otherwise resolve the dispute by arbitration or at law.
- B. CONTRACTOR shall to the fullest extent permitted by Laws and Regulations, indemnify and hold harmless OWNER, ENGINEER, or ENGINEER's consultants, and the officers, directors, partners, employees, agents and other consultants and subcontractors of each and any of them from and against all claims, costs, losses and damages (including, but not limited to, fees, and charges of engineers, architects, attorneys, and other professionals and court and arbitration costs) arising directly, indirectly or consequently out of any action, legal or equitable, brought by an separate contractor against OWNER, ENGINEER, ENGINEER's Consultants, or the extent said claim is based on or arises out of the CONTRACTOR's performance of the Work. Should a separate contractor cause damage to the Work or property of CONTRACTOR or should the performance of work by any Contractor at the Site give rise to any other Claim, CONTRACTOR shall not institute any action, legal or equitable, against OWNER, ENGINEER, or ENGINEER's Consultants, or permit any action against any of them to be maintained and continued in its name or for its benefit in any court or before any arbiter which seeks to impose liability on to recover damages from OWNER, ENGINEER or ENGINEER's Consultants on account of any such damage or Claim.
- C. If CONTRACTOR is delayed at any time in performing or furnishing Work by any act or neglect of a separate contractor, and OWNER and CONTRACTOR are unable to agree to the

extent of any adjustment in Contract Times attributable thereto, CONTRACTOR, may make a Claim for an extension of times in accordance with Article 12. An extension of the Contract Times shall be CONTRACTOR's exclusive remedy with respect to OWNER, ENGINEER, or ENGINEER's Consultants, for any delay, disruption, interference, or hindrance caused by any separate contractor. This paragraph does not prevent recovery from OWNER, ENGINEER, or ENGINEER's Consultant, for activities that are their respective responsibilities.

10. Dispute Resolution

A. In the event a dispute arises between OWNER and CONTRACTOR relating to any obligation undertaken in this agreement, they agree to utilize the following procedure to resolve any such dispute.

B. OWNER and CONTRACTOR will attempt to resolve all disputes by first engaging in good faith negotiations between them as soon as possible after the dispute arises.

11. Mediation.

If negotiations are not successful, OWNER and CONTRACTOR will submit their dispute to a mutually acceptable mediator for non-binding mediation.

12. Legal Process

A. If mediation is not successful, OWNER and CONTRACTOR will seek a resolution of their dispute through the normal legal process in a court of competent jurisdiction in Rutherford County, Tennessee.

B. If a dispute is resolved through legal process, the prevailing party shall be entitled to recover from the other all court costs.

13. Authority of Engineer.

Wiser Consultants is not to be construed as the author of these specifications and as a consequence cannot act as an agent of the City of Murfreesboro with respect to these specifications. In no way shall Wiser Consultants override, control, or alter the City of Murfreesboro Technical Specifications without written authorization by the City of Murfreesboro. Where used elsewhere in these bid/contract documents, the term "Engineer" shall refer to Wiser Consultants, LLC. OWNER may enter into a contract with ENGINEER for the ENGINEER to conduct Construction Management Services beyond the services provided for in Article 9 of the General Conditions. Contractor shall acknowledge Engineer Responsibilities as defined by OWNER.

14. Contractor's Project Manager.

A project manager will be required for this project. The project manager will be required to deal with all property owner concerns and will be responsible for defining a schedule for public meetings associated with the project, subject to Owner and Engineer approval. **Signage will be posted regarding the project with the following information:**

CONTRACTOR NAME, ADDRESS AND PHONE NUMBER
CONTRACTOR REPRESENTATIVE
OWNER NAME
ENGINEER NAME
CONTRACT START DATE
CONTRACT COMPLETION DATE

15. Project Identification Sign

- A. The Contractor shall provide a project identification sign, the standard sign being 12 feet wide by 8 feet high of 3/4 inch "Duraply" or "MDO Laminate
- B. Sign to be supported on pressure-treated pine posts (at least 4 inches x 4 inches) and adequately braced to resist wind pressure
- C. Sign should be erected from eye level at viewing point (at least 4 feet clear from bottom of sign to grade).
- D. All surfaces of the wood should be primed with latex undercoat.
- E. A standard construction sign sketch, with additional details, instructions, and color treatments noted, will be included in the contract documents.
- F. Exact copy to be furnished by the Owner's Representative after contract award
- G. Sign to be approved by Building and Codes Department prior to construction.

16. Authority of Inspectors.

The inspectors employed by and working under the direction of the Engineer or the Owner shall have full authority to reject any defective material or workmanship. Inspectors will not be authorized to revoke, alter, enlarge, or relax the provisions of the plans and specifications, or to issue any instructions contrary thereto.

17. Use of a Portion of the Work.

Whenever in the opinion of the Engineer any portion of the work is in suitable condition, it may be put into use upon written order of the Engineer. Such usage shall not be held to be in any way an acceptance of the work or any part thereof as a waiver of any of the provisions of these specifications or contract. Pending final completion and acceptance of the work, all necessary repairs and renewals of any section of the work so put into use which are due to defective material or workmanship, or to natural causes other than ordinary wear and tear, or to the operation of the Contractor shall be performed by and at the expense of the Contractor.

18. Pre-Bid Meeting.

A pre-bid conference will be held at 10:00 a.m. on April 22, 2015 at the Murfreesboro Parks and Recreation Office located at 697 Veteran's Parkway, Murfreesboro, TN 37130. Representatives of OWNER and ENGINEER shall be present to discuss the Project.

- 19. Pre-Construction Meeting.** As soon as the project is awarded, a pre-construction meeting will be held by the Engineer with representatives of the Owner and the CONTRACTOR (and subcontractors at the discretion of the Contractor). At this time, the CONTRACTOR shall accept the schedule as provided by the ENGINEER or submit to the ENGINEER for approval a schedule of the sequence of construction activities and the expected dates of commencement and completion for each major item of work. CONTRACTOR supplied schedule shall reflect

milestone dates as indicated by the schedule created by the ENGINEER.

20. Bidding Instructions

- A. The Contractor shall be responsible for providing suitable borrow material for securing fill and topsoil materials for completion of the project. No extra payment shall be made based on location of any borrow area utilized.
- B. Any and all forms of rock excavation, including but not limited to mass rock, trench rock, cored rock, etc., shall be performed by the Contractor at no extra cost to the Owner. All excavation is unclassified.
- C. Any undercutting of unsuitable material required under roadbeds, parking lots, and/or structures shall be removed and replaced with suitable material at the unit price provided. No extra payment shall be received by Contractor for replacing undercut material with suitable fill material.

21. Field Engineering and Quality Assurance.

It shall be the responsibility of the City of Murfreesboro to provide a Quality Assurance Contractor (QAC) for quality assurance including materials testing. Quality assurance is defined as the sampling and testing required by the technical specifications to meet the minimum requirements of the City of Murfreesboro. The Contractor is required to maintain quality control of the project. Quality control is defined as the Contractor's program for meeting all of the criteria listed within this document for all facets of the construction. Quality control remains the responsibility of the Contractor.

22. Excavation.

- A. All types and classes of excavation shall be classified as common excavation. No separate payment will be made for any rock excavation encountered.
- C. Where excavated material does not meet the requirements of the Technical Specifications for "backfill material," it shall be removed from the site and replaced with suitable material. No separate payment shall be made to the Contractor for this work.
- D. A sub-surface investigation has been performed along the roadway corridor and is provided as a supplement to these technical specifications.

23. Dewatering Excavation.

- A. The Contractor shall do all ditching, pumping, well pointing and bailing, build all drains, and do all work necessary to keep the excavation clear of ground water, sewage or storm water during the process of the work and until the finished work is safe from injury.
- B. No pipe shall be laid in water, and water shall not be allowed to run over masonry until concrete or mortar has set at least forty-eight (48) hours.
- C. All water pumped or drained from the work shall be disposed of in a manner satisfactory

to the Tennessee Department of Environment and Conservation (TDEC) Aquatic Resource Alteration Permit (ARAP) and Engineer without damage to adjacent property or to other work under construction

- D. Necessary precautions shall be taken to protect all construction against flooding and/or flotation from hydrostatic uplift.
- E. No extra payment shall be made for any dewatering operations required by the Contractor. No claims shall be considered valid regarding elevated groundwater conditions.

24. Waste Material Disposal

- A. Waste material, including trees, stumps, logs, brush, roots, grass, vegetation, humus, rubbish, demolition materials, over-excavated rock (including cap rock and boulders > 2' in any axis) from mass grading, structures or trenches deemed objectionable by the Owner, and other matter deemed objectionable by the Owner, shall be removed from the site and disposed of in a manner not to damage the Owner or other persons. Disposal should be in accordance with all applicable governing regulations and requirements.
- B. Contractor to obtain, at his expense, any permits required for the disposal of waste material.
- C. No extra payment shall be received for disposal of waste material.

25. Grassing and Planting.

The Contractor shall be responsible for ground cover as indicated in the Technical Specifications. All areas of vegetation which are scarified or disturbed by any mechanism during the construction activities will require grassing and planting to provide vegetative cover. Any area that fails to develop a successful stand following seeding will be re-seeded at the Contractor's expense for a period of one year after placement.

- 26. Water. Water Supply.** Water supply to the project will be through the facilities of the Murfreesboro Water & Sewer Department. Connections to their system and water line construction within their easements will be in accordance with their specifications and requirements. All temporary tap fees and water costs shall be borne by the Contractor and incidental to the construction costs. No extra payment shall be received by Contractor for paying MWSD any fees or water costs.

27. Blasting for Utilities prior to Achieving Subgrade.

The Contractor may drill and shoot trenches for all utilities prior to achieving subgrade. Sanitary Sewer main may be installed prior to the achieving subgrade. The Contractor must supply the Engineer and Owner a set of sanitary sewer cut sheets for construction of sanitary sewer mains prior to installing sanitary sewer.

This provision does not allow for the installation of the storm sewer, potable water, repurified water, electrical, telephone, or cable prior to achieving subgrade on the roadbed.

- 28. Article 12 Sections 12.03 and 12.05 shall be amended as follows:**

Weather and neglect of utility owner or other contractors shall not be deemed a consideration for the extension of the contract time.

29. Liquidated Damages and Other Consequences for failure.

CONTRACTOR and OWNER recognize that time is of the essence of this Agreement and that OWNER will suffer financial loss if the Work is not completed within the times specified in paragraph 4.02 of the General Conditions, plus any extensions thereof allowed in accordance with Article 12 of the General Conditions. The parties also recognize the delays, expense, and difficulties involved in proving in a legal or arbitration proceeding the actual loss suffered by OWNER if the Work is not completed on time. Accordingly, instead of requiring any such proof, OWNER and CONTRACTOR agree that as liquidated damages for delay (but not as a penalty), CONTRACTOR shall pay OWNER \$250 for each day that expires after the time specified in paragraph 4.02 of the General Conditions for Substantial Completion up to 15 days past contract expiration. After 15 days, CONTRACTOR shall pay OWNER \$250 for each day past until the Work is substantially complete. After Substantial Completion, if CONTRACTOR shall neglect, refuse, or fail to complete the remaining Work within the Contract Time or any proper extension thereof granted by OWNER, CONTRACTOR shall pay OWNER \$250 for each day that expires after the time specified in paragraph 4.02 for completion and readiness for final payment until the Work is completed and ready for final payment.

CONTRACTOR shall have 24 hours to notify OWNER if CONTRACTOR fails to complete work associated with milestones listed in Section 4.02 of the General Conditions. OWNER may CONTRACTORS bonding company within 72 hours of CONTRACTORS inability to justify delays related to reaching milestone dates.

Payment Applications, submitted by CONTRACTOR, shall not be processed by ENGINEER until work associated with milestones is substantially complete.

CONTRACTOR shall pay OWNER for cost related to additional project management if CONTRACTOR fails to meet milestones as listed in Section 4.02 of the General Conditions.

Failure of CONTRACTOR to meet milestones listed in Section 4.02 of the General Conditions will jeopardize future work for the City of Murfreesboro and delays resulting from CONTRACTOR performance will be reported to the Murfreesboro, TN City Council.

30. Permit Compliance.

All permits required to be obtained by Owner are contained within Appendix 1 of these bid documents. All conditions of the permits described within the respective permit document is hereby made a part of the Contract and shall be considered obligatory by the Contractor in constructing this Project. The Contractor is responsible for inspecting erosion and maintenance control devices and file the appropriate reports with the TN Dept. of Environment and Conservation.

31. Hours of operation.

The CONTRACTOR is disallowed from conducting operations which include the erection

(including excavation), demolition, alteration or repair of any private property within five hundred (500) feet of an occupied residence, between the hours of 8:00 p.m. and 7:00 a.m. Monday through Friday during the months of September through May, between the hours of 8:00 p.m. and 6:00 a.m. during the months of June through August, and between 8:00 p.m. and 8:00 a.m. Saturday and Sunday throughout the year which involves the use of a (i) hammer, or (ii) pneumatic, gas, diesel, or electric powered tool or equipment. Notwithstanding the foregoing, nothing in this supplementary condition shall prohibit construction work or operation of construction equipment during periods of natural disaster, storms which necessitate emergency home repairs or removal of trees, emergency utility repairs, or the normal repair of heating or cooling units.

32. Non-collusion Affidavit of Prime Bidder.

The Prime Bidder shall supply with his bid the executed non-collusion affidavit. At the pre-construction meeting or prior to that meeting, the successfully awarded Prime Contractor shall supply all non-collusion affidavits of the subcontractors identified as performing the various parts of the work as named by the Prime Contractor.

33. Non-collusion Affidavit of Sub-Contractor.

The Contractor shall require each of the subcontractors identified in Subsection 8. of the Supplementary Conditions to execute the attached Noncollusion Affidavit of Subcontractor.

34. Bypass Pumping of Sewerage

Bypass pumping of sewerage shall be considered incidental to the construction of the project. No additional payment shall be made for bypass pumping of sewerage.

35. Traffic Control. The Contractor is obligated to maintain traffic control in such a manner to safeguard the general public and public servants from harm or inconvenience. The Contractor shall be required to submit his traffic control plan to the Engineer for review prior to commencing work. All traffic control devices and installations shall conform with the requirements of the "Manual on Uniform Traffic Control Devices."

36. Existing Utilities.

The Contractor shall verify the exact location of all existing utilities and make provisions to safeguard utilities that are to remain in place. Any damage to existing utilities resulting from the Contractor's activities shall be repaired to Local Standards at the Contractor's expense.

37. Erosion Control.

The Contractor shall implement measures to prevent erosion throughout the construction period and prevent accumulation of debris along the construction site, and shall provide for periodic collection and disposal of debris.

38. Sanitary Provisions.

The Contractor shall provide such sanitary accommodations for use of his employees and those of his subcontractors in compliance with the regulations of Local and State Departments of Health as well as the Occupational Safety and Health Administrations (OSHA.)

39. Contractor shall video the area of work (including the limits of construction as well as access drives, storage areas, and concrete wash areas) prior to construction and deliver to Murfreesboro Park and Recreation for the project files.
40. Contractor shall be responsible for ensuring that all site conditions outside of the proposed improvements are left in a condition better than or equal to the existing site conditions. Any damage to existing facilities due to construction activities shall be at the Contractor's expense.
41. Contractor shall be responsible for cleanup of work areas, access drives, storage areas, and concrete wash areas when those areas are open to use by others. This also includes keeping restrooms clean.
42. Grease removal system shall be a Big Dipper 4000 Series W 200 IS AGRU or approved equal.
43. Contractor shall notify the Engineer and Owner prior to the Bid Opening date of any found discrepancies with the specifications and construction plans. Work not specifically shown but is required for the system to be fully operational shall be included in the contractors submitted bid prices.
44. Exterior condensate lines shall be tied to existing storm drainage system.
45. The last date to accept questions shall be April 24, 2015. Please send questions to Purchasing@murfreesborotn.gov

TECHNICAL SPECIFICATIONS

SECTION 01010 SUMMARY OF WORK

PART 1 -GENERAL

1.01 RELATED REQUIREMENTS

- A. Provisions for use of site and Owner occupancy, and relations of Contractor and/or sub-contractors.

1.02 WORK COVERED BY THE CONTRACT DOCUMENTS

- A. The project includes improvements to the 2 existing concessions buildings at the Barfield Crescent Park in Murfreesboro, TN. The work includes the addition of HVAC systems, duct work and all electrical requirements, concrete and fencing on the exterior of the buildings, the installation of air curtains, the installation of a grill and hood, and the installation of a grease removal system as shown on the plans and listed in the contract documents.

1.03 CONTRACT METHOD

- A. Construction work to be under a Unit Price Contract.

1.04 WORK SEQUENCE

- A. The milestone dates for this project are:
 - 1. Installation of both HVAC systems (Complete) – 15 Days
 - 2. All work substantially complete - 45 days
 - 3. Final Completion - 60 days

1.05 CONTRACTOR USE OF PREMISES

- A. Assume full responsibility for the storage, protection and safekeeping of products under this Contract.

1.06 CONTRACTOR RESPONSIBILITIES:

- A. Designate submittals and delivery date for each product.
- B. Review shop drawings, product data, samples, and other submittals. Submit to the Engineer with notification of any observed discrepancies or problems anticipated due to non-conformance with Contract Documents.
- C. Receive, inspect and unload products at site.
- D. Inspect deliveries jointly with the Owner and the Engineer or their Representative, record shortages and damaged or defective items.

- E. Handle products at site, including uncrating, storage and maintenance during storage.
- F. Protect products from damage and from exposure to elements.
- G. Assemble, install, connect, adjust, and finish products.
- H. Provide installation inspections required by public authorities.
- I. Provide installation inspections required by all equipment.
- J. Repair and replace items damaged by the contractor or his operations.
- K. Pre-Blast Survey
 - 1. The Contractors' attention is called to the fact that a pre-blast survey will be required. The survey shall be done by a sub-contractor qualified to perform seismograph test and approved by the Engineer. This survey shall consist of, but shall not be limited to, photographs inside and outside of structures within the survey area. These photographs shall be kept on file for one (1) year from date of acceptance of this project.
 - 2. The cost of the pre-blast survey shall be merged into the total price of the project, and no additional payment will be allowed therefore.
 - 3. If the Contractor or his surety desires to enter private homes or businesses to determine their condition and/or possible blasting damage prior to construction, they shall first obtain a letter of permission and introduction from the Director of Water and Sewer for the City of Murfreesboro.
- L. Pre-Blast Notification
 - 1. Forty-eight (48) hours prior to blasting, the Contractor shall notify in writing the adjacent property located within a fifteen hundred (1500) feet radius of the blasting site. The notification shall include the Contractor's name and the name and telephone number of the contact person.

1.09 WORK UNDER THIS CONTRACT

- A. Furnish all labor, tools, equipment, materials for the construction of new interceptor sewer, but not necessarily limited to the following principal items of work:
 - 1. The project includes improvements to the 2 existing concessions buildings at the Barfield Crescent Park in Murfreesboro, TN. The work includes the addition of HVAC systems, duct work and all electrical requirements, concrete and fencing on the exterior of the buildings, the installation of air curtains, the installation of

a grill and hood, and the installation of a grease removal system as shown on the plans and listed in the contract documents.

END OF SECTION

SECTION 01090 STANDARDS

1. GENERAL

Meet the requirements and recommendations of all Standards, Institutes, Associations, etc., referred to throughout these documents and specifications as if they were fully reproduced herein. Unless otherwise noted, the latest editions shall apply.

2. ABBREVIATIONS

AAMA - Architectural Aluminum Manufacturer's Association.
AASHTO - American Association of State Highway and Transportation Officials.
ACI - American Concrete Institute.
AFBMA - Anti-Friction Bearing Manufacturer's Association.
AGC - Association of General Contractors.
AGMA - American Gear Manufacturer's Association.
AIA - American Institute of Architects.
AIEE - American Institute of Electrical Engineers.
AIMA - Acoustical and Insulating Materials Association.
AISC - American Institute of Steel Construction.
AISI - American Iron and Steel Institute.
AITC - American Institute of Timber Construction.
AMCA - Air Moving and Conditioning Association.
ANSI - American National Standards Institute.
APA - American Plywood Association.
API - American Petroleum Institute.
ARI - Air Conditioning and Refrigeration Institute.
ASA - American Standards Association.
ASC - Association of Specialty Contractors.
ASHRAE - American Society of Heating, Refrigerating, and Air Condition Engineers.
ASME - American Society of Mechanical Engineers.
ASTM - American Society for Testing and Materials.
AWI - Architectural Woodwork Institute.
AWPB - American Wood Preservers Bureau.
AWPI - American Wood Preservers Institute.
AWS - American Welding Society.
AWWA - American Water Works Association.
BIA - Brick Institute of America.
CRSI - Concrete Reinforcing Steel Institute.
CS - Commercial Standards.
CSI - Construction Specifications Institute.
EPA - Environmental Protection Agency.
FAA - Federal Aviation Administration.
FM - Associated Factory Mutual Laboratories.
FS - Federal Specifications.
IRI - Industrial Risk Insurers.
MBMA - Metal Building Manufacturers Association.
NAAMM - National Association of Architectural Metal Manufacturers.
NEC - National Electrical Code.
NEMA - National Electrical Manufacturer's Association.
NFPA - National Fire Protection Association or National Forest Products Association.
NKCA - National Kitchen Cabinet Association.

NPT - National Pipe Thread.
NSF - National Sanitation Foundation.
NWMA - National Woodwork Manufacturing Association.
OSHA - Occupational Safety and Health Administration.
RIS - Redwood Inspection Service.
SAE - Society of Automotive Engineers.
SBCC - Standard Building Code Congress.
SDI - Steel Deck Institute.
SJI - Steel Joist Institute.
SMACNA - Sheet Metal and Air Conditioning Contractor's
National Association
SPII - Southern Pine Inspection Institute.
SSBC - Southern Standard Building Code.
SSPC - Steel Structures Painting Council.
TCA - Tile Council of America.
TDOT - Standard Specifications for Road and Bridge Construction, Tennessee Department of
Transportation.
TIMA - Thermal Insulation Manufacturer's Association.
UL - Underwriter's Laboratories.
USG - United States Gypsum.
WCLIP - West Coast Lumber Inspection Bureau.
WWPA - Western Wood Products Association.

END OF SECTION

SECTION 01200 PAYMENT PROCEDURES

PART 1 -GENERAL

1.01 SUMMARY

- A This section includes requirements for the CONTRACTOR to meet when submitting an Application for Payment in addition to those found in the Agreement and the General Conditions. This section shall not over rule or alter any part of the Agreement or General Conditions.

1.02 RELATED SECTIONS

- A Section 01300 Administrative Procedures

PART 2 - PRODUCTS

NOT USED

PART 3- EXECUTION

3.01 FORMAT

- A Each Application for Payment shall include the following:
 - 1. Cover Sheet
 - 2. Continuation Sheet(s)
 - 3. Invoices or receipts for stored material for which payment is requested.
 - 4. Other information that may be required by the ENGINEER.
- B. The Cover and Continuation sheets shall be similar to the EJCDC form 1910-8-E and approved by the ENGINEER.
- C. The schedule of values listed on the continuation sheet shall match the unit price bid form.
- D. All values of stored material listed on the Application for Payment shall be verified with legible Xerox copies of applicable invoices or receipts for the respective material.
- E. Certify the Application for Payment by signature of authorized officer.
- F. Each authorized Change Order shall be included on continuation sheet(s), Change Order number shall be printed in the description column and the remaining columns shall be completed as for an original item of work.

3.02 SUBMITTAL PROCEDURE

- A. Submit six (6) copies of the Application for Payment to the ENGINEER. The ENGINEER shall retain one (1) copy, the OWNER shall retain four (4) copies, and one copy shall be returned to the CONTRACTOR along with the Payment.
- B. Each copy of the Application for Payment shall include original signatures
- C. Each Application for Payment shall include a transmittal letter identifying the date, OWNER's name, Project name, Application for Payment number, and the Project Engineer's name.

END OF SECTION

SECTION 01150 MEASUREMENT AND PAYMENT

PART I - GENERAL

The Contractor shall furnish all labor, tools, equipment, and materials to construct the proposed improvements complete as shown on the Plans and as described in these specifications. The work shall be measured for payment in accordance with applicable provisions of these specifications and payment shall be made on the basis of the unit prices or lump sum prices bid.

The Contractors attention is called to the fact that, although the pay items shown shall be the basis for establishing the contract price, the pay items do not necessarily reflect the total amount of work to be performed. The cost of incidental work such as cleanup, clearing and grubbing, trenching, backfilling, testing, etc. which is necessary, but which is not specifically listed as one of the pay items, shall be included in the price bid for the eligible pay items to which the incidental work is most closely related. If an item of work is not specifically listed in the Bid Schedule, payment for it shall not be separately made.

PART 2 - MEASUREMENT AND PAYMENT

There follows a section-by-section description of the Methods of Measurement and Basis for Payment of the various items of work associated with the respective section.

SECTION 01568 - EROSION AND SEDIMENT CONTROL

No separate measurement or payment will be made for individual erosion control devices excluding silt fencing and erosion control netting. The Contractor will be paid by unit price for both items as long as the Contractor's erosion control system is in place and functional.

SECTION 02050 – TRAFFIC CONTROL

Traffic control is not a pay item. It shall be considered and designated a necessary part of the construction, and unit prices for items with traffic control is connected shall be full compensation for this item and for all labor, materials, and equipment required to complete the item in accordance with the plans and specifications.

SECTION 02100 - SITE PREPARATION

Site preparation is not a pay item. It shall be considered and designated a necessary part of the construction, and unit prices bid for items with which site preparation is connected shall be full compensation for this item and for all labor, materials, and equipment required to complete the item in accordance with the plans and specifications.

SECTION 02221W - TRENCHING, BEDDING, AND BACKFILLING FOR WATERLINES, REPURIFIED WATER MAINS AND SANITARY SEWER FORM MAINS

Measurement and payment for the items associated with trenching, bedding, and backfilling for waterlines, repurified mains and sanitary sewer force mains and appurtenances shall be as follows:

A. TRENCHING AND EXCAVATION

Trenching and Excavation are unclassified and are not pay items. They shall be considered and designated a necessary part of the construction, and unit prices bid for items with which trenching and excavation are connected shall be full compensation for these items and for all labor, materials, and equipment required to complete the item in accordance with the Plans and Specifications. No additional payment will be made for rock excavation and no separate payment will be allowed therefore except as stated below.

B. OVERDEPTH EXCAVATION AND BACKFILL

MEASUREMENT

Where the Engineer directs over depth excavation to remove unsuitable material which is not the result of the Contractors negligence, such over depth excavation and backfill with crushed stone will be measured for payment. Measurement shall consist of the actual volume to be removed and replaced six (6") inches below the bottom of the pipe.

PAYMENT

Payment for over depth excavation and backfill with crushed stone shall be made on the basis of the unit price bid per cubic yard, which payment shall constitute full compensation for excavation and disposal of the unsuitable material and replacement with stone.

C. SHEETING, SHORING, AND BRACING

Sheeting, shoring, and bracing used and then removed is not a pay item. They shall be considered and designated a necessary part of the construction, and unit prices bid for items with which sheeting, shoring, and bracing is connected shall be full compensation for this item and for all labor, materials, and equipment required to complete the item in accordance with the plans and specifications.

D. SHEETING LEFT IN PLACE

MEASUREMENT

Timber sheeting left in place at the direction of the Engineer will be measured for payment on the basis of the actual square feet of sheeting remaining in the trench as determined by multiplying the length and width in feet.

PAYMENT

Payment for sheeting left in place at the direction of the Engineer shall be made on the basis of the unit price bid per square foot.

E. BEDDING

Bedding, except Class "A", is not a pay item. Bedding shall be considered and designated a necessary part of the construction, and unit prices bid for items with which bedding is connected shall be full compensation for this item and for all labor, materials, and equipment required completing the item in accordance with the plans and specifications.

Class "A" Bedding shall be measured and paid for as described in Measurement and Payment, Section 02722, Paragraph G., Class "B" Concrete.

F. BACKFILLING

1. SELECTED, GENERAL AND CRUSHED STONE BACKFILL

Selected, general and crushed stone backfill are not pay items. They shall be considered and designated a necessary part of the construction, and unit prices bid for items with which selected, general and crushed stone backfill are connected shall be full compensation for these items and for all labor, metals, and equipment required to complete the items in accordance with the plans and specifications.

G. CRUSHED STONE FOR USES OTHER THAN BEDDING AND BACKFILL

1. CRUSHED STONE PLACED AS DIRECTED BY ENGINEER

MEASUREMENT

Where the Engineer directs the Contractor to provide crushed stone at places other than those covered in other pay items, the stone shall be measured by utilizing actual delivery tickets showing date, location, and weight delivered and accepted by Engineer for incorporation in the work. Such delivery tickets must be initialed by the Engineer's representative as approved for payment.

Stone used for over depth excavation backfill, pavement repair and replacement, and on other items where included in separate pay items will not be paid for under this item.

PAYMENT

Payment for crushed stone placed at the direction of the Engineer shall be made on the basis of the unit price bid per ton, and shall constitute full compensation for delivery, placement, and compaction as required.

2. BASE MATERIAL FOR PAVEMENT REPAIR OR REPLACEMENT

Crushed stone used for pavement repair or replacement will be paid for as described in this Measurement and Payment Section under Section 02575 Sidewalks, Pavement and Surfacing.

3. MAINTENANCE

Crushed stone required for maintenance of various areas affected by the Contractor's operations during construction including but not limited to unpaved roads, shoulders, driveways, and trench maintenance shall be at the Contractor's expense and will not be a pay item.

SECTION 02485 GRASSING AND PLANTING

Measurement and Payment for the items associated with grassing shall be as follows:

A. SEEDING

MEASUREMENT

Areas where new seeding and strawing is provided shall be measured horizontally along the centerline of the sewer installed. Seeding and strawing of all areas disturbed by construction, as required herein, except those areas immediately above the centerline of pipe installed will not be measured for payment under this item of work, but shall be merged in the unit prices for other items of work.

PAYMENT

Payment for seeding and strawing shall be made at the unit price quoted for seeding and strawing as measured above.

B. SODDING (New or Reset)

MEASUREMENT

Areas where new sod has been set or existing sod has been removed, stored, and reset will be measured for payment by the square yard.

PAYMENT

The accepted quantities for new sod or for removing, storing, and resetting sod will be paid at the bid price per square yard for the work completed in place. Price shall include water, fertilizer, and lime.

SECTION 02575 – SIDEWALKS, PAVEMENT AND SURFACING

Measurement and payment for the items associated with pavement repair and replacement for sanitary sewers, water lines, force mains and appurtenances shall be as follows:

A. PAVEMENT REPAIR

MEASUREMENT

Measurement for pavement repair shall be equal to the horizontal length of the pavement cut along the length of the trench or the horizontal length of the trench just outside the edge of pavement if so indicated on the plans for repair only. Asphalt overlay shall be measured by the linear foot along the centerline of sewer.

PAYMENT

Payment for pavement repair shall be made on the basis of the unit prices bid for various classifications of pavement repair as indicated on the Bid Schedule. Such payment shall constitute full compensation for furnishing all labor, materials, and equipment, and replacing the damaged pavement, including the base as required. The Contractor is advised that although the limits of payment shall be as described under measurement, the Contractor shall be responsible for replacing all pavement damaged during construction, so that the paved area is left in a condition as good as or better than before the start of construction.

Payment for asphalt overlay shall be at the unit price bid per linear foot for asphalt overlay, complete in place.

A copy of all trip tickets for aggregate, asphalt concrete binder, and surface showing the weight for each load of aggregate, binder and surface, and signed both by the Contractor or his representative and by the Engineer or his representative shall be furnished to the Engineer at the end of each day's work.

B. PAVEMENT REPLACEMENT

Measurement and payment for pavement replacement will be made for each of the paving materials used and in accordance with the applicable sections of the Tennessee Department of Transportation (TDOT) Standard Specifications for Road and Bridge Construction, dated March 1, 1981, except as noted below. Such payment shall constitute full compensation for furnishing all labor, materials, and equipment to prepare the surface and place the materials.

A copy of all trip tickets for aggregate, asphalt concrete binder, and surface showing the weight for each load of aggregate, binder and surface, and signed both by the Contractor or his representative and by the Engineer or his representative shall be furnished to the Engineer at the end of each day's work.

MEASUREMENT AND PAYMENT

Measurement and payment will be made at the unit price bid per linear foot as named in the contract. The quantity to be paid will be the actual number of linear feet of pavement installed along the centerline of the sewer.

C. ASPHALTIC CONCRETE BINDER AND ASPHALTIC CONCRETE SURFACE

MEASUREMENT

Cold mix, asphalt concrete binder and surface shall be measured by the ton as outlined in the TDOT Standard Specifications, except that no difference will be made for the various ingredients.

PAYMENT

Payment for these items shall be made at the unit price bid per ton for cold mix, asphalt concrete binder, and asphalt concrete surface, complete in place.

D. PAVEMENT MARKING

MEASUREMENT

Pavement marking shall be measured by the linear foot.

PAYMENT

Payment for pavement marking shall be considered incidental to the roadway pavement replacement unit price.

SECTION 02713 - WATER MAINS

MEASUREMENT

Measurement of water main relocations shall be by horizontal measurements or station distance to the nearest foot (1') along the installed water main length without deduction for space occupied by fittings. Water main size shall be based on nominal internal pipe diameter as identified in the bid schedule.

PAYMENT

Water main construction shall be paid for on the basis of the respective unit prices bid per linear foot for various sizes, with regard to location **with respect to travel way**. Where water mains require going under the travel way or are within three (3') feet of the travel way, backfilling with stone and pavement replacement shall be considered incidental to the linear foot price bid.

Such payment for water mains shall constitute payment in full for furnishing all labor, tools, equipment and materials and installing the water main complete, including incidental work such as location and protection of existing utilities, clearing, excavation (including rock), dewatering trenches, bedding with crushed stone, backfilling (including crushed stone backfill for water main under travel way), disposal of

surplus excavated material, line cleaning, disinfecting and testing, and all finished grading and property restoration.

All items required in conjunction with the water main construction, such as but not limited to, retaining glands, mega-lugs, rodding, etc. shall be considered incidental to the linear foot unit price bid.

Unit price increase payments shall constitute payment in full for the additional cost of installing complete a substitute pipe size and/or material over and above the installation cost complete of the proposed pipe size and/or material.

B. FITTINGS FOR WATER MAINS

MEASUREMENT

Measurement of fittings such as bends and tees and other necessary specials for payment shall be made by actual weight of fittings provided.

PAYMENT

Fittings shall be paid for on the basis of the unit price established in the bid and shall constitute payment in full for the extra cost of furnishing and installing such fittings over and above the cost of the line in which the fitting is located. Payment for bends and tees shall include the crushed stone, retainer glands, mega-lugs and concrete used around them for support, thrust blocking and/or restraint.

SECTION 02722 - SANITARY SEWERS (GRAVITY)

Measurement and payment for gravity sanitary sewers and related appurtenances shall be as follows:

A. SANITARY SEWER LINES (GRAVITY)

Gravity sewers shall be classified as either under travel way or outside travel way. A travel way includes roads, shoulders, driveways, sidewalks, parking areas or graveled areas. A sewer which runs parallel to a travel way will be considered under travel way if it lies three feet (3') or less from the edge of the travel way.

MEASUREMENT

Measurement of gravity sanitary sewers for payment shall be by horizontal measurements or station distance to the nearest foot (1') along the sewer lines from center of manholes or from centerline of fittings without deduction for space occupied by manholes or fittings. Sewer size shall be based on nominal internal pipe diameter as shown on the Plans.

1. SEWERS OUTSIDE TRAVEL WAY

It is called to the Contractor's attention that the unit price bid for gravity sewer shall include the cost of all excavation (including trench backfill with satisfactory excavated materials) necessary for the complete installation of the gravity sewer and appurtenances, and no separate payment shall be allowed therefore. It shall not include the removing and disposing of all unstable materials necessary to establish satisfactory foundations and install gravel refill. It shall also not include tee branches, manhole bases, manhole sidewall, frames and covers and other units of work specifically set out in the Proposal and Contract Agreements, but will be paid separately under items listed.

2. SEWERS UNDER TRAVEL WAY

The unit price bid for gravity sewer shall include the cost of all excavation including crushed stone backfill inside roadways or as directed by the Engineer during construction. It shall not include the removing and disposing of all unstable materials necessary to establish satisfactory foundations and install gravel refill. It shall also not include tee branches, manhole bases, manhole sidewall, frames and covers and other units of work specifically set out in the Proposal and Contract Agreements, but will be paid separately under items listed.

PAYMENT

Gravity sanitary sewer shall be paid for on the basis of the respective unit prices bid per linear foot for various sizes, and location with respect to travel way. Such payment shall constitute payment in full for furnishing all labor, tools, equipment and materials and installing the sewer complete, including incidental work such as location and protection of existing utilities, clearing, excavation (including rock), dewatering trenches, bedding with crushed stone, backfilling (including crushed stone backfill for gravity sewers under travel way), disposal of surplus excavated material, line cleaning and testing, and all finished grading and property restoration. The cost of furnishing and installing adapters shall also be included in the bid prices for sewer pipe inasmuch as no separate payment will be made.

Manholes, fittings, pavement repair and replacement, and such other items as may be included in separate bid items shall be paid for separately. Pipe included within the limits of lump sum bid items will be paid for under the lump sum bid item, and no separate payment will be made on a unit price basis.

Unit price increase payments shall constitute payment in full for the additional cost of installing complete a substitute pipe size and/or material over and above the installation cost complete of the proposed pipe size and/or material.

B. FITTINGS FOR GRAVITY SEWER LINES

MEASUREMENT

Measurement of fittings such as wyes, bends, and other necessary specials for payment shall be made by actual count of fittings provided.

PAYMENT

Fittings shall be paid for on the basis of the respective unit prices bid for fittings of the various types and sizes and shall constitute payment in full for the extra cost of furnishing and installing such fittings over and above the cost of the line in which the fitting is located. Payment for wyes and bends shall include the crushed stone and concrete used around them for support.

C. CHIMNEY RISERS

MEASUREMENT

Measurement of chimney risers for payment shall be made from the top of the tee in the main sewer, the bottom of the riser, to the plugged portion of the wire at the top of the riser, as shown on the Standard Detail Drawing for Sanitary Sewer Service Lines.

PAYMENT

Payment for chimney risers shall be made on the basis of the respective unit prices bid per vertical foot for pipe of the various sizes and materials. Payment for chimney risers shall include the cost of the concrete encasement, supporting brick, grout stacks, fittings, valve box, and frame and cover.

D. SERVICE LINES

Service lines shall be classified as either under travel way or outside travel way as defined in A.

MEASUREMENT

Measurement of service lines for payment shall be the horizontal distance in linear feet from the end of the fitting in the main sewer line to the end of the service line as shown on the Standard Detail Drawing for Sanitary Sewer Service Lines.

PAYMENT

Payment for service lines shall be made on the basis of the respective unit prices bid per linear foot for pipe of the various sizes and material and location with respect to travel way. Payment for service lines shall include the excavation, bedding, backfill (including crushed stone backfill for service lines under travel way), installation, testing, and other incidentals necessary for the completion of the service line. No extra payment will be made for stoppers or markers, the cost of the items to be included in prices bid for items of work with which they are related.

E. CLEANOUTS

MEASUREMENTS

Measurement of cleanouts shall be made by actual count of cleanouts provided.

PAYMENT

Payment for cleanouts shall be made on the basis of the unit price bid per each and shall include fittings, riser pipe, plug, concrete blocking and box. Payment for cleanouts shall be made in addition to the payment made for service laterals.

F. CLASS "A" CONCRETE

MEASUREMENT

Measurement of Class "A" concrete used for concrete piers and other structures requiring Class "A" concrete as shown on the Plans shall be made on the basis of the volumes of concrete required to complete the structure to the desired dimensions shown on the detail in the Plans or on the Standard Detail Drawing.

PAYMENT

Payment for furnishing and placing Class "A" concrete shall be made on the basis of the unit price bid per cubic yard multiplied by the eligible quantity of concrete determined by the method of measurement described above. Such payment shall constitute compensation in full for excavation, backfill, forms, reinforcing steel, straps, bolts, furnishing and placing the concrete, finishing, and other incidental work necessary to complete the structure ready for its intended use. No separate payment will be made for Class "A" concrete in structures where the concrete is included in the unit price or lump sum price bid for the item.

G. CLASS "B" CONCRETE

MEASUREMENT

Class "B" concrete used for cradles, arch encasement or full encasement will be measured for payment by measurement of the horizontal distance of cradles, arch encasements or full encasement constructed along the centerline of the sanitary sewer installed at locations shown on the plans or as directed by the ENGINEER. The depth and shape shall be as shown on the Standard Detail Drawings.

The volume of Class "B" concrete used in caps will be computed using the length, width and depth as directed by the ENGINEER.

Measurement for Class "B" concrete used in pads, or other concrete items shall be based on the theoretical volume required for the dimensions of the structure as shown on the Drawings or as directed by the ENGINEER.

PAYMENT

Payment for furnishing and installing Class "B" concrete used for cradles, arch encasement and full encasement shall be made on the basis of the linear foot price bid and shall be full compensation for all

labor, materials, and equipment necessary for the construction of the item per the Standard Detail Drawing.

Payment for furnishing and installing Class "B" concrete for caps and pads shall be on the basis of the unit price bid per cubic yard multiplied by the eligible quantity of concrete determined and outlined in the Measurement Section above. Such payment shall constitute compensation in full for excavation and backfill, furnishing and placing the concrete and other incidental work necessary to complete the item.

No separate payment will be made for Class "B" concrete included in manholes, drop pipes, service risers, concrete blocks at fittings or other structures where the price of such concrete is included in the unit price or lump sum price bid for the item.

H. HIGHWAY CROSSINGS

MEASUREMENT

Measurement of highway and road crossings shall be the described length of casing pipe or tunnel indicated on the plans.

PAYMENT

Payment for the highway crossing shall be made on the basis of the unit price per linear foot bid and shall be full compensation for all work performed to install the crossing complete including but not limited to casing pipe or tunnel liner, carrier pipe, excavation of bore pit (including rock), backfill of bore pit, all pavement replacement within the Lump Sum limits (if required), excavation to locate end of casing pipe, dewatering of excavated areas, stabilization of carrier pipe within the casing pipe or tunnel, sealing ends of casing pipe or tunnel, and other incidentals required to complete the installation. There will be no extra pay for traffic control appurtenances or flagging.

Manholes located at the ends of tunnel sections will be paid as Unit Price items. Manholes which access the portion of the sewer line through the tunnel shall be included in the Lump Sum price for the tunnel.

I. STREAM CROSSINGS

MEASUREMENT

Lump Sum items for the stream crossings indicated on the Plans and shown on the proposal form will include all of the work involved in constructing these crossings. It should be noted that these are the only water course crossings for which extra pay will be made. Compensation for extra equipment, labor and materials used for other water course crossings shall be made for under the payment for Sewer Line.

PAYMENT

Payment shall include compensation for all of the equipment, labor and materials used to construct these crossings other than erosion control measures and rip-rap bank stabilization. Concrete lining of the

stream or ditch channel shall be included as part of the lump sum cost associated with the respective stream crossing.

J. RIP-RAP BACKFILL AND BANK STABILIZATION

MEASUREMENT

Rip-Rap used as backfill or bank stabilization in stream crossings shall be measured by the ton as determined by actual delivery tickets showing date, location and weight delivered and accepted by the ENGINEER.

PAYMENT

Accepted quantities of rip-rap will be paid at the bid price per ton for the work complete in place. This payment will include all of the equipment, labor, and material used for bank stabilization. Material includes, but is not limited to rip-rap and geotextile underlays as specified by the ENGINEER.

SECTION 03303 – CONCRETE FOR WATER LINE, REPURIFIED WATER MAINS AND SANITARY SEWER APPURTENANCES

Refer to Measurement and Payment Section 02721, Repurified water Mains and Section 02722, Sanitary Sewers (Gravity) for measurement and payment information related to concrete for appurtenances for these items.

TEMPORARY CONSTRUCTION FENCE

MEASUREMENT

Measurement for temporary construction fences shall be the actual linear footage installed.

PAYMENT

Payment for the temporary construction fence shall be made on the basis of the unit price bid per linear foot. Payment shall include all cost of labor, material and equipment required to construct the fence prior to utility construction and removal of fence after project acceptance.

SECTION 01300 ADMINISTRATIVE REQUIREMENTS

PART I – GENERAL

1.01 SUMMARY

- A. The provisions of the General Conditions set forth the relationships between parties concerning administrative tasks. The purpose of this section is to identify the procedural requirements for certain administrative tasks related to this project.
- B. This section shall not in any way alter the provisions set forth in the General Conditions.
- C. Specifically, this section includes the requirements for administrative task including Shop Drawing submittal, Project Meetings, and Project Closeout.

PART 2 - PRODUCTS

PART 3 - EXECUTION

3.01 PROGRESS SCHEDULES

- A. Progress schedules shall be in the form of a Gantt type chart or other acceptable form to MWSD.
- B. As a minimum, progress schedules shall include at least one task for each major division of the Projects General Requirements and Specifications.
- C. At the ENGINEER's request, the CONTRACTOR shall break the Project Schedules tasks into separate subtask for clarification or information purposes.

3.02 SHOP DRAWING AND SAMPLE SCHEDULE

- A. Shop Drawing and Sample Schedules shall be organized by their corresponding specification section.
- B. The CONTRACTOR is responsible for assembling and updating the Shop Drawing and Sample Schedules.
- C. The CONTRACTOR is responsible for updating and distributing updated copies of the Shop Drawing and Sample Schedules to the ENGINEER and the ENGINEER's Sub-consultants.

3.03 SHOP DRAWINGS AND SAMPLES

- A. Shop Drawings
 - 1. The CONTRACTOR shall submit Shop drawings where required in the Contract Documents or when the ENGINEER requests special information in writing.

2. Drawings shall be titled with the Project Name and ENGINEER's Project Number.
3. Drawings shall include reference to their related Drawing and/or Specification Number.

B. Samples

1. The CONTRACTOR shall submit Samples where required in the Contract Documents or when the ENGINEER requests special information in writing.
2. Samples shall include the full range of the manufacturer's standard finishes where applicable.
3. Samples shall illustrate functional characteristics of products, including parts and attachments, where applicable.
4. Samples shall be labeled with identification.

C. Submittal Requirements

1. Transmit submittals in accordance with approved Progress Schedule and in such a sequence to avoid delay in the Work.
2. As a minimum, the ENGINEER should have ten (10) working days to review a submittal.
3. Submittals shall include a four by eight inch (4 x 8 inch) blank space for the CONTRACTOR's and the ENGINEER's review stamp. Submit six (6) copies of the Shop Drawing to the ENGINEER for review.
4. Submittals shall include a transmittal letter that identifies the Project Name, ENGINEER's project number, and the related Drawing and/or Specification number(s).

D. Re-submittals

1. Re-submittals shall meet the requirements for initial submittals.
2. Re-submittals shall note changes made to the previous submittal.

E. Distribution

1. The CONTRACTOR is responsible for distributing Shop Drawings and Samples which bear the ENGINEER's stamp of approval for all persons and entities requiring the information.

3.04 PROGRESS MEETINGS

A. GENERAL

1. Progress meetings shall be held monthly to review the progress of the work.
2. The purpose of the project meeting are to present problems or conflicts that may have arisen during the course of the work, and review the immediate and long-term schedules for the work that remains to be completed.

B. OWNER's REPRESENTATIVE Responsibilities

1. The OWNER's REPRESENTATIVE shall be responsible for scheduling and administering monthly progress meetings.
2. The OWNER's REPRESENTATIVE shall
 - a. Make physical arrangements for meetings.
 - b. Prepare agenda for meetings.
 - c. Distribute written notice of each meeting seven days in advance of meeting date.
 - d. Preside at meetings.
 - e. Record the meeting minutes.
 - f. Distribute copies of minutes within seven working days after each meeting. Distribution shall include mailing or faxing one copy of the minutes to all participants in the meeting, and to all parties affected by decisions made at the meeting.

C. LOCATION

1. Location of the meetings shall be the CONTRACTOR's field office unless otherwise specified by the ENGINEER.

D. ATTENDANCE

1. The following parties shall be adequately represented at each progress meeting:
 - a. OWNER, or OWNER's designated representative which may be the ENGINEER
 - b. ENGINEER
 - c. ENGINEER's consultants as appropriate
 - d. CONTRACTOR
 - e. Subcontractors and Suppliers as appropriate
2. It is the CONTRACTOR'S responsibility to ensure representatives of the CONTRACTOR, subcontractors and suppliers attending meetings are qualified and authorized to act on behalf of the entity each represents.

E. AGENDA

- 1 The minimum agenda for a Project meeting shall include:
 - a. Approval of minutes of the previous meeting.
 - b. Review of Work progress.
 - c. Field observations, problems and decisions.
 - d. Identification of problems which may impede progress.
 - e. Review of submittals schedule and status of submittals.
 - f. Review of off-site fabrication and delivery schedules.
 - g. Review of progress schedule.
 - h. Review of corrective measures to regain projected schedules when applicable.
 - i. Planned progress during succeeding work period.
 - j. Coordination of projected schedules.
 - k. Maintenance of quality and work standards.
 - l. Effect of proposed changes on progress schedule and coordination.

END OF SECTION

SECTION 01305 PRE-CONSTRUCTION VIDEOTAPING

PART 1 – GENERAL

1.01 SECTION INCLUDES

- A. Pre-construction videotaping of the project site, including permanent and temporary easement widths and any improvements in the vicinity of construction.
- B. Videotaping shall be conducted in the presence of the Project Representative of the Murfreesboro Water and Sewer Department or Project Representative of the Engineer.

1.02 VIDEOTAPING OF PROJECT

- A. Videotaping to be provided by a firm with at least three (3) years experience acceptable to Engineer.
- B. The Contractor shall submit one (1) color video tape of VHS format, T-120. Only the aforementioned type of tape will be accepted. The tape shall be permanently labeled with the following information before submitting said tape:
 - 1. Name of Project
 - 2. Location
 - 3. Date Televised
 - 4. Date Tape Submitted
 - 5. Name of Contractor
- C. the tape will become the property of the Owner. If the tape is of such poor quality that the Engineer is unable to evaluate the pre-construction condition of the affected property, the Contractor shall be required to re-televisize the area and provide a tape of good quality at no cost to the Owner.
- D. There shall be no payment for this item. The cost shall be included in other bid items.

PART 2 – PRODUCTS

- A. Not Used.

PART 3 – EXECUTION

- A. Not used.

END OF SECTION

SECTION 01568 EROSION AND SEDIMENT CONTROL

PART 1 -GENERAL

1.01 SCOPE OF WORK

The work covered by this Section relates to erosion and sediment control on all cut and fill operations, excavation, backfill, or other construction activities within the limits of the construction site, within any temporary or permanent easements, and within any borrow site used during the period of construction. It is the Contractor's responsibility to develop an erosion control plan utilizing the methods outlined in this section or any additional methods deemed necessary. This plan shall be submitted prior to any work being undertaken on this project. The Contractor shall furnish, install and maintain the erosion control measures outlined in this erosion control plan. The Contractor shall adjust and update the plan and provide additional erosion control devices at no additional cost to Owner should the results of the initial plan fail to comply with applicable codes and laws. Included in the Appendix to this document is a Storm Water Pollution Protection Plan (SWPPP) and a Notice of Intent (NOI) developed by the Owner. Prior to beginning construction on this project, the Contractor will be required to amend the SWPPP to reflect his construction methodology and submit for approval.

1.02 COORDINATION OF TEMPORARY AND PERMANENT CONTROLS

The temporary pollution control provisions contained herein shall be coordinated with the permanent erosion and sediment control features to insure economical, effective, and continuous erosion and sediment control throughout the construction and post-construction period.

1.03 CONTRACTOR'S RESPONSIBILITY TO COMPLY WITH LAW

Since the Contractor is responsible for the construction means and methods which in turn are responsible for insuring that construction does not harm the Waters of Tennessee, the Contractor is solely responsible for insuring that the above-mentioned laws and regulations are met.

1.04 RELATED WORK SPECIFIED ELSEWHERE

Refer to following Section of these specifications for work related to this Section: A.

Section 02485 - Grassing

PART 2- PRODUCTS

2.01 TEMPORARY BERMS

A temporary berm is constructed of compacted soil, with or without a shallow ditch, at the top of fill slopes or transverse to centerline of fills. These berms are used temporarily at the top of newly constructed slopes to prevent excessive erosion until permanent controls are installed or slopes stabilized.

2.02 TEMPORARY SLOPE DRAINS

A temporary slope drain is a facility consisting of stone gutters, fiber mats, plastic sheets, concrete or asphalt gutters, half round pipe, metal pipe, plastic pipe, sod, or other material that may be used to carry water down slopes to reduce erosion.

2.03 SEDIMENT STRUCTURES

Sediment basins, ponds, and traps are prepared storage areas constructed to trap and store sediment from erodible areas in order to protect properties and stream channels below the construction areas from excessive siltation.

2.04 CHECK DAMS

Check dams are barriers composed of large stones, sandbags, or other non-erodible materials placed across or partially crossing a natural or constructed drainage way.

2.05 TEMPORARY SEEDING AND MULCHING

Temporary seeding and mulching are measures consisting of seeding, mulching, fertilizing, and matting utilized to reduce erosion. All cut and fill slopes, including waste sites and borrow pits, shall be seeded when and where necessary to eliminate erosion.

2.06 BALED HAY OR STRAW CHECKS

Baled hay or straw erosion checks are temporary measures to control erosion and prevent siltation. Bales shall be either hay or straw containing five (5) cubic feet or more of material. Baled hay or straw checks shall be used where the existing ground slopes toward or away from the embankment along the toe of slopes, in ditches, or other areas where siltation erosion or water runoff is a problem.

2.07 TEMPORARY SILT FENCES

Silt fences are temporary measures utilizing woven wire or other approved material attached to posts with filter cloth composed of burlap, plastic filter fabric, etc., attached to the upstream side of the fence to retain the suspended silt particles in the runoff water.

2.08 RUBBLE STONE RIP-RAP

Where rip-rap backfill is called for on the drawings, coarse stone from the excavation may be conserved and used. Rip-rap for bank stabilization shall be sound, dense, durable, and free from excessive cracks, pyrite intrusions, and other structural defects. At least ninety (90%) percent of the stone shall be not less than eight (8") inches wide by twelve (12") inches long by twelve (12") inches deep and shall be approximately rectangular in shape.

2.09 GEOTEXTILE EROSION CONTROL FABRIC

The geo-textile fabric used in conjunction with the rip-rap for erosion control shall meet Corps of Engineers specifications for erosion control fabric and shall be equivalent to Exxon GTF 400E or Mirafi 700X fabrics.

PART 3 - EXECUTION

3.01 GENERAL

- A. The Contractor shall submit to the Engineer for approval a plan and schedule for accomplishment of temporary and permanent erosion and sediment control for the project, including haul roads, borrow pits, and waste areas. No work shall be started until the Plan and Schedule have been accepted by the Engineer.
- B. The Contractor shall submit a spill prevention plan to the Engineer for review. The contents of this spill prevention plan shall depend on what types of chemicals, lubricants, and fuels will be used, and if these will be stored on site. As a minimum, if no fuel, lubricants, or other chemicals are stored on site, either temporarily in vehicular tanks or in skid or trailer mounted tanks, a plan shall be supplied which directs all employees of the Contractor in the proper procedures to be followed should a spill occur. For more complex chemical storage requirements, a more complex plan will be required.
- C. Conduct construction so as to provide the site with maximum protection from erosion and sedimentation at all times.

General guidelines to be followed by the Contractor include, but are not limited to, the following:

- 1. Grading and construction operations should be timed to minimize soil exposure.
- 2. Remove only the existing vegetation that is absolutely necessary.
- 3. Reseed and mulch areas where vegetation is removed.
- 4. Divert runoff water around areas where vegetation has been removed.
- 5. Utilize measures to keep runoff velocities as low as possible.
- 6. Trap sediment on-site.

7. Construction debris must not be allowed to enter stream channels.
8. Inspect and maintain control measures as necessary.
9. Under no circumstances will spent oil wastes be discharged anywhere on the site without the expressed written consent of the Tennessee Office of Water Management.

3.02 CONSTRUCTION REQUIREMENTS

- A The Engineer has the authority to limit the surface area of erodible earth material exposed by clearing and grubbing, the surface area of erodible earth material exposed by excavation, borrow and fill operations, and to direct the Contractor to provide immediate permanent or temporary pollution control measures to prevent contamination of adjacent streams or other watercourses, lakes, ponds, or other water impoundments. Such work may involve the construction of temporary berms, dikes, dams, sediment basins, slope drains, and use of temporary mulches, mats, seeding, or other control devices or methods as necessary to control erosion. Cut and fill slopes shall be seeded, sodded, and mulched as the excavation proceeds to the extent directed by the Engineer.
- B. The Contractor shall be required to incorporate all permanent erosion control features into the project at the earliest practicable time as outlined in the accepted schedule. Temporary pollution control measures shall be used to correct conditions that develop during construction; that are needed prior to installation of permanent pollution control features; or that are needed temporarily to control erosion that develops during the normal construction practices, but are not associated with permanent control features on the project.
- C. Where erosion is likely to be a problem, clearing and grubbing operations should be so scheduled and performed that grading operations and permanent erosion control features can follow immediately thereafter if the project conditions permit; otherwise erosion control measures may be required between successive construction stages. Under no conditions shall the surface area of erodible earth material exposed at one time by clearing and grubbing exceed 250,000 square feet without approval of the Engineer.
- D. The Engineer will limit the area of excavation, borrow, and embankment operations in progress commensurate with the Contractor's capability and progress in keeping the finish grading, mulching, seeding, and other such permanent pollution control measures current in accordance with the accepted schedule. Should seasonal limitations make such coordination unrealistic, temporary erosion control measures shall be taken immediately to the extent feasible and justified.
- E. The Engineer may increase or decrease the amount of surface area of erodible earth material to be exposed at one time by clearing and grubbing, excavation, and borrow and fill operations as determined by his analysis of project conditions.

- F. In the event of conflict between these requirements and pollution control laws, rules, or regulations, or other Federal, State, or Local agencies, the more restrictive laws, rules, or regulations shall apply.

3.03 PIPELINE CONSTRUCTION NEAR STREAMS AND ACROSS STREAMS

- A. In areas where the pipeline is parallel to a stream bank, excavated material shall be stored on the upslope side of the trench rather than between the trench and stream. Staked and entrenched straw bales and/or silt fences shall be placed where necessary to prevent runoff from the construction site from entering the stream channel.
- B. At stream crossings, Contractor shall utilize construction methods and erosion control methods which will minimize the entrance of sediment into the stream channel. Hay bales or silt fences shall be placed where required.

Water pumped from cofferdams or excavations must be held in settling or dewatering basins until it is at least as clean as the stream water on the upstream side of the crossing. Once the stream crossing has been completed, Contractor shall place rubble stone rip-rap to protect bank areas disturbed by construction. Prior to the placement of rip-rap material, the sloping ground surface shall be thoroughly compacted by the use of hand or mechanical tamps. Geotextile erosion control fabric shall then be placed in strict accordance with manufacturer's recommendations. At the bottom of the slope, rip-rap shall be placed at least two (2') feet below the natural ground surface. Across the face of the slope, rip-rap shall be placed a minimum of five (5') beyond the firm ditch line.

The standard depth of rubble stone rip-rap shall be twelve (12") inches. Rip-rap material shall be carefully placed in a single layer so that the stones shall be as close together as is practicable in order to reduce voids to a minimum. Each stone shall be so placed that the depth will be perpendicular to the surface upon which it is set. The length shall be placed as directed by the Engineer, and each main stone shall be placed so that it will be against the adjoining stones. The stones shall be placed in such a manner as to stagger all joints as far as it is possible and practicable.

The main stones shall be thoroughly "chinked" and filled with the smaller stones by throwing them over the surface in any manner that is practical for the smaller stones to fill the voids. This work shall continue with the progress of the construction. Tamping of the stones will not be required if the stones have been placed in a reasonable and satisfactory manner.

Knapping of the stones will not be required, except stones protruding more than four (4") inches above what is considered normal surface of the stones, in which case these stones shall be broken down to come within four (4") inches of the normal surface.

3.04 CONSTRUCTION OF EROSION AND SEDIMENT CONTROL STRUCTURES

- A. TEMPORARY BERMS

A temporary berms shall be constructed of compacted soil, with a minimum width of twenty-four (24") at the top and a minimum height of twelve (12") inches with or without a shallow ditch, constructed at the top of fill slopes or transverse to centerline of fills. Temporary berms shall be graded so as to drain to a compacted outlet at a slope drain. The area adjacent to the temporary berm in the vicinity of the slope drain must be properly graded to enable this inlet to function efficiently and with only minimum ponding in this area. All transverse berms required on the downstream side of a slope drain shall extend across the grade to the highest point at approximately a ten (10°) degree angle with a perpendicular to centerline. The top width of these berms may be wider and the side slope flatter on transverse berms to allow equipment to pass over these berms with minimal disruptions. When practical, and until final elevations are approached, embankments should be constructed with a gradual slope to one side of the embankment to permit the placement of temporary berms and slope drains on only one side of the embankment.

B. TEMPORARY SLOPE DRAINS

Temporary slope drains shall consist of stone gutters, fiber mats, plastic sheets, concrete or asphalt gutters, half round pipe, metal pipe, plastic pipe, flexible rubber, or other materials which can be used as temporary measures to carry water accumulating in the cuts and on the fills down the slopes prior to installation of permanent facilities or growth of adequate ground cover on the slopes.

Fiber matting and plastic sheeting shall not be used on slopes steeper than four to one (4:1) except for short distances of twenty (20') feet or less.

All temporary slope drains shall be adequately anchored to the slope to prevent disruption by the force of the water flowing in the drains. The base for temporary slope drains shall be compacted and concavely formed to channel the water or hold the slope drain in place. The inlet end shall be properly constructed to channel water into the temporary slope drain. Energy dissipaters, sediment basins, or other approved devices shall be constructed at the outlet end of the slope drains to reduce erosion downstream. An ideal dissipater would be dumped rock or a small sediment basin which would slow the water as well as pick up some sediment. All temporary slope drains shall be removed when no longer necessary and the site restored to match the surroundings.

C. SEDIMENT STRUCTURES

Sediment structures shall be utilized to control sediment at the foot of embankments where slope drains discharge; at the bottom as well as in the ditch lines atop waste sites; in the ditch lines for borrow pits. Sediment structures may be used in most drainage situations to prevent excessive siltation of pipe structures. All sediment structures shall be at least twice as long as they are wide.

When use of temporary sediment structures is to be discontinued, all sediment accumulation shall be removed, and all excavation backfilled and properly compacted. The existing ground shall be restored to its natural or intended condition.

D. CHECK DAMS

Check dams shall be utilized to retard stream flow or restrict stream flow within the channel. Materials utilized to construct check dams are varied and should be clearly illustrated or explained in the Contractor's erosion control plan.

All check dams shall be keyed into the sides and bottom of the channel. A design is not needed for check dams.

E. TEMPORARY SEEDING AND MULCHING

Seeding and mulching shall be performed in accordance with Section 02485, Grassing.

F. BALED HAY OR STRAW EROSION CHECKS

Hay or straw erosion checks shall be embedded in the ground four to six (4" to 6") inches to prevent water flowing under them. The bales shall also be anchored securely to the ground by wooden stakes driven through the bales into the ground. Bales can remain in place until they rot, or be removed after they have served their purpose, as determined by the Engineer. The Contractor shall keep the checks in good condition by replacing broken or damaged bales immediately after damage occurs. Normal debris cleanout will be considered routine maintenance.

G. TEMPORARY SILT FENCES

Temporary silt fences shall be placed on the natural ground, at the bottom of fill slopes, in ditches, or other areas where siltation is a problem. Silt fences are constructed of wire mesh fence with a covering of burlap or some other suitable material on the upper grade side of the fence and anchored into the soil.

The Contractor shall be required to maintain the silt fence in a satisfactory condition for the duration of the project or until its removal is requested by the Engineer. The silt accumulation at the fence may be left in place and seeded, removed, etc., as directed by the Engineer. The silt fence becomes the property of the Contractor whenever the fence is removed.

H. RUBBLE STONE RIP-RAP

See Paragraph 3.3B.

I. GEOTEXTILE EROSION CONTROL FABRIC

See Paragraph 3.3B

3.05 MAINTENANCE

The temporary erosion and sediment control features installed by the Contractor shall be acceptably maintained by the Contractor until no longer needed or until permanent

erosion control methods are installed. Any materials removed shall become the property of the Contractor.

3.06 EROSION AND SEDIMENT CONTROL OUTSIDE PROJECT AREAS

Temporary erosion and sediment control shall include construction work outside the project area where such work is necessary as a result of construction such as borrow pit operations, haul roads, and equipment storage sites.

3.07 DUST CONTROL

All available precautions shall be taken to control dust. When the Engineer judges dust to be a problem, the Contractor shall control the dust by sprinkling, by applying calcium chloride, or by other methods as directed.

If track drills are used for drilling rock, water must be provided with the drill to eliminate dust.

END OF SECTION

SECTION 01700 CONTRACT CLOSEOUT

PART 1 GENERAL

1.01 DESCRIPTION

- A. Definitions: Closeout is hereby defined to include general requirement near the end of Contract time, in preparation for final acceptance, final payment, normal termination of contract, occupancy by Owner and similar actions evidencing completion of the work. Specific requirements for individual units of work are specified in sections of Divisions 2 through 16. Time of closeout is directly related to "Substantial Completion" and therefore, may be either a single time period for entire work or a series of time periods for individual parts of the work which have been certified as substantially complete at different dates. That time variation (if any) shall be applicable to other provisions of this section, regardless of whether resulting from "phased completion" originally specified in the Contract documents or subsequently agreed upon by Owner and Contractor.

1.02 PREREQUISITES TO SUBSTANTIAL COMPLETION

- A. General: Prior to requesting Owner's Representative's inspection for certification of substantial completion, as required by General Conditions (for either the entire work or portions thereof), complete the following and list known exceptions in request.
1. In progress payment request coincident with or first following date claimed, show either portion of work claimed as "substantially completed," or list incomplete items, value of incompleteness, and reasons for being incomplete. Include supporting documentation for completion as indicated elsewhere in these contract documents.
 2. Submit statement showing accounting of changes to the Contract Sum.
 3. Advise Owner of pending insurance change-over requirements.
 4. Submit specific warranties, workmanship/maintenance bonds, maintenance agreements, final certifications and similar documents.
 5. Obtain and submit releases enabling Owner's full and unrestricted use of the work and access to services and utilities, including (where required) occupancy permits, operating certificates, and similar releases.
 6. Deliver tools, spare parts, extra stocks of materials, and similar physical items to Owner.
 7. Make final change-over of locks and transmit keys to Owner, and advise Owner's personnel to change-over in security provisions.
 8. Complete start-up testing of systems, and instructions of Owner's operating/maintenance personnel. Discontinue (or change over) and remove from project site temporary facilities and services, along with construction tools and facilities, mock-ups, and similar elements.
 9. The Contractor is responsible for making all punch lists and execution of same prior to his request for substantial completion.
- B. Inspection Procedures: Upon receipt of Contractor's request, Owner's Representative will either proceed with inspection or advise Contractor of prerequisites not fulfilled.

Following initial inspection, Owner's Representative will either prepare Certificate of Substantial Completion, or advise Contractor of work which must be performed prior to issuance of Certificate; and repeat inspection when requested until work has been substantially completed. Results of completed inspection will form initial "punch-list" for final acceptance.

1.03 PREREQUISITES TO FINAL ACCEPTANCE

- A. General: Prior to requesting Owner's Representative's final inspection for certification of final acceptance and final payment, as required by General Conditions, complete the following and list known exceptions (if any) in request:
1. Submit final payment request with final releases and supporting documentation not previously submitted and accepted. Include certificates of insurance for products and completed operations where required.
 2. Submit updated final statement, accounting for additional (final) changes to the Contract Sum.
 3. Submit certified copy of Owner's Representative's final punch-list of itemized work to be completed or corrected, stating that each item has been completed or otherwise resolved for acceptance, endorsed and dated by Owner's Representative.
 4. Submit final meter readings for utilities, measured record of stored fuel, and similar data as of time of substantial completion or when Owner took possession of and the responsibility for corresponding elements of the work.
 5. Submit specific warranties, workmanship/maintenance agreements, final certifications and similar documents.
 6. Complete final cleaning up requirements, including touch-up of marred surfaces.
 7. Submit consent of surety.
 8. Submit final liquidated damages settlement statement, acceptable to Owner.
 9. Revise and submit evidence of final continuing insurance coverage complying with insurance requirements.
- B. Re-inspection Procedures: Upon receipt of Contractor's notice that work has been completed, including punch-list items resulting from earlier inspections, and excepting incomplete item delays because of acceptable circumstances, Owner's Representative will re-inspect work. Upon completion of re-inspection, Owner's Representative will either prepare certificate of final acceptance or advise Contractor of work not completed or obligations not fulfilled as required for final acceptance. If necessary, procedure will be repeated.

1.04 RECORD DOCUMENT SUBMITTALS

- A. General: Specific requirements for record documents are indicated in individual sections of the specifications. Do not use record documents for construction purposes; protect from deterioration or loss in a secure, fire-resistive location; provide access to record documents for Owner's Representative's reference during normal working hours.

- B. Maintenance Manuals: Organize maintenance-and-operating manual information into suitable sets of manageable size, and bind into individual binders properly identified and indexed (thumb tabbed); examples: Elevators, Finish Floor, Maintenance, Lawn and Plant Maintenance, Roof Maintenance. Include emergency instructions, spare parts listing, warranties, wiring diagrams, recommended "turn-around" cycles, inspection procedures, shop drawings, product data, and similar applicable information. Bind each manual of each set into a heavy-duty 2 inch, three ring vinyl covered binder, and include pocket folders for folded sheet information. Mark identification on both front and spine of each binder.
- C. The Contractor and his mechanical and electrical subcontractors will each keep one set of drawings in the job office and make a daily record of all changes in location of equipment, partitions, materials, etc., as approved by Owner's Representative. At the conclusion of the job, the Owner will furnish sepias to the Contractor and the mechanical and electrical subcontractors who will incorporate all changes on the sepias. This includes all Change Order sketches issued by the Owner's Representative during the progress of the work. The revised sepias are to be turned over to the Owner at the conclusion of the project.

PART 2 PRODUCTS

Not applicable.

PART 3 EXECUTION

3.01 CLOSEOUT PROCEDURES

- A. General Operating/Maintenance Instructions: Arrange for each installer of work requiring continuing maintenance (by Owner) or operation, to meet with Owner's personnel, at project site, to provide basic instruction needed for proper operation and maintenance of entire work. Include instructions by manufacturer's representatives where installers are not expert in the required procedures. Review maintenance manuals, record documentation, tools, spare parts and materials, lubricants, fuels, identification system, control sequences, hazards, cleaning and similar procedures and facilities. For operational equipment, demonstrate start-up, shut-down, emergency operations, noise adjustments, and similar operations. Review maintenance and operations in relation with applicable warranties, agreements to maintain, bonds and similar continuing commitments.

3.02 FINAL CLEANING

- A. General: Specific cleaning for specific units of work is specified in sections of Divisions 2 through 16. General cleaning during progress of work is specified in General Conditions:
 - 1. Provide final cleaning of the work, at time indicated, consisting of cleaning each surface or unit of work to normal "clean" condition expected for a first-class cleaning and maintenance program. Comply with manufacturer's instructions for cleaning operations. The following are examples, but not by way of limitation, of cleaning levels required:
 - a. Remove labels which are not required as permanent labels.
 - b. Clean glazed materials, including mirrors and window/door glass, to a polished conditions, removing substances which are noticeable as vision-obscuring materials. Replace broken glass.

- c. Clean exposed exterior and interior hard-surface finishes, including metals, masonry, stone, concrete, painted surfaces, plastics, tile, wood, special coatings, and similar surfaces, to a dirt-free conditions, free of dust, stains, films and similar noticeable distracting substances. Except as otherwise indicated, avoid disturbance of natural weathering of exterior surfaces. Restore reflective surfaces to original reflective condition.
 - d. Wipe surfaces of mechanical and electrical equipment clean, including elevator equipment and similar equipment in addition to that specified in Divisions 15 and 16; remove excess lubrication and other substances.
 - e. Remove debris and surface dust from limited-access spaces including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics and similar spaces.
 - f. Clean concrete floors in non-occupied spaces broom clean.
 - g. Vacuum clean carpeted surfaces and similar soft surfaces.
 - h. Clean plumbing fixtures to a sanitary condition, free of stains including those resulting from water exposure.
 - i. Clean light fixtures and lamps so as to function with full efficiency.
 - j. Clean project site (yard and grounds) including landscape and development areas of litter and foreign substances. Sweep paved areas to a broom clean condition; remove stains, petrochemical spills and other foreign deposits. Rake grounds which are neither planted nor paved to a smooth, even-textured surface.
- B. Removal of Protection: Except as otherwise indicated or requested by Owner's Representative, remove protection devices and facilities which were installed during course of the work to protect previously completed work during remainder of construction period.
- C. Compliances: Comply with governing regulations for cleaning operations. Do not burn waste materials at site, or bury debris or excess materials on Owner's property, or discharge volatile or other harmful or dangerous materials into drainage systems; remove waste materials from site and dispose of in a lawful manner.

Where extra materials of value remaining after completion of associates' work have become Owner's property, dispose of these to Owner's best advantage as directed.

3.03 CONTINUING INSPECTIONS

- A. General: Except as otherwise required by specific warranties, agreements to maintain, workmanship/maintenance bonds, and similar continuing commitments, comply with Owner's request to participate in inspections at end of each time period of such continuing commitments. Participate in general inspection of the work approximately one year beyond date(s) of substantial completion.

END OF SECTION

SECTION 01740 WARRANTY AND MAINTENANCE

PART I - GENERAL

1.01 SECTION INCLUDES

- A. Warranty requirements
- B. Maintenance obligations

1.02 RELATED SECTIONS

- A. General Conditions

1.03 WARRANTY

- A. The work to be performed under this Contract shall be guaranteed against defects in materials or workmanship for a period of one year following the date of formal acceptance of the project. In the event defects in materials or workmanship should appear, the CONTRACTOR shall promptly make the necessary corrections. When the defects are not of an emergency nature, the CONTRACTOR will be notified and will be given a period of two weeks in which to make the necessary corrections. Should the defect be of an emergency nature which in the opinion of the OWNER or the ENGINEER requires immediate correction, the CONTRACTOR will be notified and requested to make the necessary repairs immediately. Should this be impractical or if the CONTRACTOR should fail to respond to the request for corrective action within the specified period, the OWNER may proceed to have the defects corrected and shall bill the CONTRACTOR for all charges in connection therewith including labor, materials, and equipment rental. Such charges may be deducted from amounts due the CONTRACTOR, if any of the CONTRACTOR's money has been withheld. In the event the CONTRACTOR fails, refuses, or neglects to pay the OWNER, the Surety shall be liable for such charges.

1.04 MAINTENANCE OBLIGATIONS

- A. The CONTRACTOR shall be fully responsible for maintenance of any and all portions of the work which he performs under this contract for a period of 30 days. This maintenance obligation shall begin upon formal acceptance of the project and is intended to place a limit upon the CONTRACTOR's responsibility for normal maintenance required for the routine operations of the system. This 30 day obligation shall not be construed as relieving the CONTRACTOR of the responsibility for maintenance or repair work resulting from defective materials or workmanship during the warranty period.

PART 2 – PRODUCTS

- A. Not Used.

PART 3 –EXECUTION

- A. Not Used.

END OF SECTION

SECTION 02050 TRAFFIC CONTROL

PART I-GENERAL

1.01 TRAFFIC CONTROL AND WARNINGS

- A. Schedule and perform all work to interfere as little as possible with vehicular traffic flow. Poor planning and gross inconsideration of traffic flow will be just cause for the Owner to stop the Contractor's work until the unsatisfactory conditions have been remedied.
- B. Mark clearly all open ditches, soft backfill, parked equipment, etc., with signs and barricades during day hours, and in addition, with flares at night. Maintain all flares, signs, and barricades during weekends, holidays, and at other times when work is not in progress.
- C. Provide adequate signs and watchmen to comply with the requirements of all authorities having jurisdiction, and as necessary for the safety and convenience of the general public.
- D. Carry on the work in a manner that will cause a minimum of interruption to traffic, and do not close to through travel more than two consecutive blocks, including the cross street intersected. Where traffic must cross open trenches, provide bridges at street intersections and driveways. Post signs indicating that a street is closed and necessary detour signs for the proper maintenance of traffic. Before closing any streets, notify responsible municipal authorities.

1.02 MAINTENANCE OF TRAFFIC

- A. Contractor shall conduct his work to interfere as little as possible with public travel, whether vehicular or pedestrian. Whenever it is necessary to cross, obstruct, or close roads, driveways and walks, whether public or private, Contractor shall provide and maintain suitable and safe bridges, detours, or other temporary expedients for the accommodation of public and private travel, and shall give reasonable notice to owners of private drives before interfering with them. A copy of all written notices shall be submitted to Owner. Contractor shall obtain approval from the appropriate regulatory agencies before any public roads or streets are closed, restricted, or used as detours.
- B. The convenience of the general public and the residents along the project and the protection of persons and property are of prime importance and shall be provided for by the Contractor in an adequate and satisfactory manner. When it is necessary for residents living along the project to use a portion of road in the project area, the Contractor shall maintain, within the limits of the Work, that portion of the road in a suitable condition for pedestrian and vehicular travel. Such maintenance of traffic shall not be required when Contractor has obtained written permission from the owner and tenant of private property, or from the authority having jurisdiction over public property involved, to obstruct traffic at the designated point. Engineers shall be furnished a copy of such written permission immediately upon receipt by the contractor.
 - 1. In making open cut street crossings, Contractor shall not block more than one-half of the street at a time. Whenever possible, Contractor shall widen the shoulder on the

opposite side to facilitate traffic flow. Temporary surfacing shall be provided as necessary on shoulders.

2. The Contractor shall provide flagmen as required by the appropriate traffic regulation department of the governing body or agency having jurisdiction thereof.
3. The Contractor shall not close any street, restrict traffic, or establish detour routes without prior approval of the appropriate traffic regulation department of the governing body or agency having jurisdiction. The Contractor shall notify the appropriate traffic regulation department of the governing body or agency having jurisdiction thereover at least one week prior to any street closure or traffic restriction as there are several other public agencies that require notification depending upon work location. The Contractor shall also be responsible for the immediate notification of the police and fire departments and Med. Act Emergency Medical Service upon the development of emergency traffic restriction situations.
4. Additional requirements for maintenance of traffic shall be as specified under the barricades and lights and traffic control paragraphs in this section.
5. Additional requirements for notifying property owners and tenants of the construction schedule and operations and interruptions that are anticipated are covered under the project requirement section.

C. BARRICADES AND LIGHTS.

1. All streets, roads, and other public thoroughfares, which are closed or restricted to traffic, shall be protected by effective barricades on which shall be placed appropriate and acceptable warning signs. Barricades shall be located at the nearest intersecting public street on each side of the blocked section.
2. The Contractor shall be responsible for all traffic control devices and procedures necessary at the project site including installation, maintenance, and removal of such devices. All traffic control devices and procedures shall be as specified and shall comply with the standards of the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD) and with the appropriate traffic regulation department of the governing body or agency having jurisdiction thereover for approval prior to the commencement of the Work.
3. All open excavations shall be enclosed by suitable temporary fencing, barricades, signs, and lights to provide adequate protection to the public. Obstructions such as equipment, stored materials and spoil piles shall be provided with similar warning signs and lights.
4. All barricades and obstructions shall be illuminated with warning lights from sunset to sunrise. Material storage and conduct of the Work on or alongside public streets shall cause the minimum obstruction and inconvenience to the traveling public.
5. All barricades, signs, lights, and other protective devices shall be installed and maintained in conformity with applicable statutory requirements and, where within street rights-of-way, as required by the authority having jurisdiction thereover.

D. TRAFFIC CONTROL.

1. In addition to the requirements of the maintenance of traffic and barricades and lights paragraphs in this section, traffic control shall be as set forth herein.
2. During periods of inclement weather, rush-hour traffic, or during periods of unusually heavy traffic, the Owner may require the Contractor to cease operations in order to adequately handle the traffic. The Owner reserves the right to require the suspension or delay of certain operations, or the expediting of other operations, at no additional cost to the Owner, to provide a proper sequence of operations which will promote the satisfactory movement of traffic. The Owner may require additional barricades, lights, or flagmen at any time or at any place necessary for proper protection of traffic, but approval by the Owner of the Contractor's method of operation shall not relieve the Contractor of his responsibility to protect traffic.
3. The use and duration of using heavy steel plates to convey traffic across open excavations shall be kept to a minimum. The purpose of this requirement is to minimize the impact sound to the residents, institutions, commercial establishments, etc. The Owner reserves the right, at no additional cost to the Owner, to require the Contractor to complete certain operations and street repaving so steel plates are not required.
4. Contractor shall take extra precautions to provide and maintain emergency access on all streets and roads and to all residential, commercial, and other properties for police and fire departments and Med Act Emergency Medical Service throughout the construction operations.
5. Contractor shall maintain the use of existing walks for pedestrians at all times.

E. TRAFFIC CONTROL PLAN.

1. To obtain a permit to work within public rights-of-way, Contractor may be required to prepare and submit to the appropriate agencies, a traffic control plan in conformance with the Uniform Traffic Control Manual (MUTCD) and the requirements of the authority having jurisdiction thereover.

PART2-PRODUCTS

Not Applicable

PART 3 - EXECUTION

Barricades, Guards, and Safety Provisions: Place and maintain barricades, fences, construction signs, torches, flashing lights, lanterns, guards, and flagmen as required during the progress of the construction work and until it is safe for traffic to use the roads and streets. Material piles, equipment, and pipe which may serve as obstructions to traffic shall be enclosed by fences or

barricades and shall be protected by proper lights when the visibility is poor. The rules and regulations of WTCB, OSHA, and appropriate authorities respecting safety provisions shall be observed.

END OF SECTION

SECTION 02100 SITE PREPARATION

PART 1 GENERAL

1.01 SCOPE OF WORK

The work covered by this Section consists of clearing, grubbing, removing and resetting fences, removing and disposing of all debris, vegetation, and all other objects such as curbs, walks, pavement, etc. that are located within excavation limits, except for such objects that are designated to remain. The work covered by this Section also consists of protecting trees, shrubbery, lawns, existing utilities, and structures that are designated to remain and traffic control.

- 1.02** The Contractor shall be responsible for obtaining all the local permits required and for notifying Tennessee One Call to locate all the existing utilities.

1.03 RELATED WORK SPECIFIED ELSEWHERE

Refer to following Sections of these specifications for work related to this Section.

- A. Section 01568 - Erosion and Sediment Control

1.04 QUALITY ASSURANCE

- A. Owner will employ a qualified testing laboratory to observe this work and make tests required. Testing laboratory will:
1. Have borrow fill, aggregate, sand and topsoil tested and approved before it is moved to the project site.
 2. Observe proof-rolling of site to determine adequacy of in-place soils. If soils are not adequate to bear weights which will be imposed, testing laboratory will recommend corrective action to be taken.
 3. Test in-place soil and filled and compacted areas. If these are not adequate to bear weights imposed, testing lab will advise the Owner's Representative of their recommendations. He will direct any corrective measures that are necessary.
 4. Verify quantities of material removed and quantities of material placed, where unit prices are involved.

1.05 PROTECTION

- A. Protect streets, roads, walks, trees and buildings to remain on-site, other similar items, and adjacent property from damage. Remove mud and dirt from streets, roads, etc., caused by construction traffic.
- B. Protect excavations and site in general from ponding water and erosion. Construct and maintain temporary drainage. Pump, if necessary, to keep excavations free from water.

- C. Protect, maintain and restore bench marks, monuments and other reference points affected by this work. If such items are displaced or destroyed by this work, they will be reestablished by a licensed surveyor at Contractor's expense. After items have been permanently set, certify the work and furnish certification to the Owner's Representative.
- D. Protect utilities designated to remain on site. Repair or replace if damaged by this work.
- E. Protect all drainage systems from siltation by using proper grading practices, silt fencing, and check dams.

PART 2 PRODUCTS

2.01 FILL MATERIALS

- A. Earth Fill: Shall be in accordance with Section 02200 of these specifications.
- B. Aggregate Fill: Structural crushed stone or natural gravel, ASTM C33, Size No. 67.
- C. Topsoil: Natural, fertile, friable, productive soil, neither excessively acid nor alkaline, and free from toxic substances, stones, weeds, clay, clods, roots, cinders and debris.

2.02 EXCAVATION MATERIAL

- A. All material shall be unclassified and no separate payment shall be made for rock.

PART 3 EXECUTION

3.01 PREPARATION

- A. Stake out the project site to establish boundaries, roads and drives to be constructed, areas to be cut and filled, building locations, and other pertinent features.
- B. When site has been staked out, do not proceed with work until approval is received from the Owner's Representative.

3.02 REMOVAL OF OBSTRUCTIONS

- A. Completely remove rocks, boulders, stumps, roots over 1 inch in diameter, and similar on-grade and below-grade obstructions within ground area to be occupied by new construction. Remove to the depths specified in Section 02110.
- B. Clean out existing basements, wells, cisterns, septic tanks and drain fields, cesspools, catch basins, sink holes, cellars and similar items, to solid subgrade and break up masonry and/or concrete bottoms so that no pieces to remain are over 12 inches in their longest dimension. Fill with specified aggregate.

3.03 REMOVAL AND STORAGE OF TOPSOIL

- A. Topsoil removed may be re-used provided it meets requirements specified above.
- B. Before removing topsoil:
 - 1. Mow grass, weeds, and other annual-type growth, and brush close to ground as may be required, or clear by other approved means.

2. Scrape or rake area to remove brush, roots, loose grass, weeds, and rocks before stripping topsoil.
- C. Remove topsoil to its entire depth in spaces to be covered by construction, excavated, filled, and graded.
- D. Store topsoil in area designated on the drawings or instructed by the Owner's Representative to prevent erosion and mixture with debris and other materials.
- E. Any excess topsoil shall remain on the site in a location designated by the Owner's Representative.

3.04 PROOF-ROLLING

- A. In areas to be covered by construction, including paving, or to receive fill material, and for a distance of 10 feet out in all directions, proof-roll with a fully loaded tandem axle rubber-tired truck. Run truck or roller at normal walking speed so that testing laboratory may observe ground at all times. Testing lab will conduct any additional tests which he believes are necessary to determine existing conditions.
- B. When soft spots are found, the testing laboratory will recommend cutting out of soft spots and backfilling and re-compacting.

3.05 SITE WORK TOLERANCES

- A. Grade, fill, and compact, as required, to establish elevations shown on drawings. Make allowances as follows:
 1. Turf and landscaped areas; elevation less 8 inches for topsoil placement.
 2. Concrete walks; elevation less 4 inches for walk paving section.
 3. Asphalt drives and parking lots as indicated; indicated elevation less cross sectional thickness for paving materials.

3.06 ROUGH GRADING

- A. Cut, fill, and compact as necessary the entire project site less allowances for items specified above.
- B. Grade to uniform levels and slopes without abrupt changes. Make vertical grade transitions with large radii.
- C. Finish sub-grades true with even planes at required elevations.
- D. Slope sub-grades evenly away from building to provide drainage at a grade not less than 1/4 inch per foot unless otherwise shown on the drawings.
- E. Finish sub-grades in ditches and swales.
- F. Dispose of unsuitable material by promptly removing from project site. Coordinate removal of unsuitable materials with city officials.

3.07 FILLING AND COMPACTING

- A. Provide approved earth fill and aggregate.
- B. Before depositing fill, remove vegetation and other unsuitable material. Do not place fill on sub-grade that contains frost or mud, or is frozen.
- C. Place compacted earth fill in loose, uniform, horizontal layers not exceeding 8 inches thick. Where fill materials are hand tamped, place fill in layers not to exceed 4 inches thick.
- D. Compact sub-grade to a density of 95 percent Standard Proctor. Compact sub-grade for roads to a density of 95 percent as determined by Standard Proctor (ASTM D-698). Provide assistance necessary in making tests. Where tests indicate that fill does not conform to compaction density specified, take necessary action to bring those areas up to specified requirements and retest as required.
- E. Where the sub-grade or fill material is moisture conditioned before compacting, uniformly apply water to the surface of material to prevent free water from appearing on the surface during or subsequent to compaction operations.
- F. Where sub-grade material is too wet to permit proper compaction, remove material and replace with borrow fill, or scarify and air dry. Wet materials may be stockpiled and allowed to dry until proper soil moisture levels desirable for compacting the soil as structural fill is obtained. Discing, harrowing or pulverizing of stockpiles to assist the drying of soils is recommended.
- G. All soil to be moisture conditioned or dried to reach desirable soil moisture levels shall be periodically tested by registered soils testing lab to insure proper compaction levels.
- H. Soils unsuitable for structural fill may be used as fill and as a topsoil supplement.
- J. Granular Fill
 - 1. Coordinate this work with concrete trade so that concrete can be placed promptly after granular fill has been placed.
 - 2. Install granular fill for utility lines as specified. Roll and tamp fill thoroughly for good compaction.

3.08 ACTIONS BY TESTING LABORATORY

- A. See Paragraph 3.04 - PROOF-ROLLING, above.
- B. ~~See Paragraph 3.03 - Field Quality Control of Section 02200.~~
- C. During filling and compacting work the Testing Lab will test samples at random depths and areas for adequacy of compaction.

3.09 REMEDIAL WORK

- A. If testing lab so observes:
 - 1. Remove soft material and replace with approved earth fill. (Note: Subject to Testing Lab's approval, course sand or approved aggregate fill may be used.)
 - 2. Re-compact fill materials to attain required compaction density.

3.10 PLACING AND FINISHING TOPSOIL

- A. Before placing topsoil, confirm acceptance of underground utilities.
- B. Where large trees as determined by the Owner's Representative are to be located in areas of structural fill, granular fill, or unacceptable subsoil, excavate a pit to a minimum of 5 feet wide and 5 feet deep and backfill and compact with topsoil placed in four (4) inch lifts and compacted by making at least six passes with a hand-guided vibratory compactor to finished grades.
- A. Provide additional topsoil as required. If materials excavated on the site do not produce the necessary amount, suitable materials from off-site shall be obtained upon approval of the Owner's Representative.
- B. Level and slope topsoil as indicated to ensure that finished grades are within 0.1 of a foot of spot elevation.
- C. Remove stones and surface irregularities; crowns or depressions exceeding 3 inches in 10 feet will not be permitted.
- D. Finish grades even with the top of adjacent walks and curbs.

3.11 SEDIMENT AND EROSION CONTROL

- A. Protect newly graded areas from erosion. Where necessary, temporarily seed disturbed areas with annual rye grass at a rate of 4 lbs/1000 square feet. If seeding is necessary in summer months, contact the Owner's Representative for an approved seeding application.
- B. Repair settlement and erosion which occurs prior to acceptance of work.
- C. Temporary Ditch Check: See plans for straw bale detail. Space as shown on plans.
- D. Leave straw bale ditch checks in place throughout construction except when ditches are fine graded, and seeded or sodded.
- E. Perform periodic maintenance on ditch checks to remove sediment and replace straw bales as necessary so as not to inhibit flow or runoff.
- F. Use stone check dams in place of straw bales as shown on the plans. See plans for detail of stone check dams.
- G. Use sediment control fencing along all perimeters of grading activities and as shown on plans.
- H. Perform periodic maintenance on sediment fence to remove sediments, re-stake knocked down fencing and reinforce with strawbales as necessary to protect downstream drainage systems from sediment.
- I. Owner's Representative will make periodic site visits to inspect erosion control devices. If erosion control devices are not being properly maintained, a written notice will be issued. Upon subsequent site visits if additional violations of the specifications relating to maintenance of erosion control devices is detected the Contractor will be charged \$500.00 per day until all erosion control maintenance has been completed.

- J. The Contractor shall inspect all erosion control devices on a weekly basis and within 24 hours of all storm events that produce 1/2 inch of rain in a 24 hour period. All defects discovered by these inspections shall be repaired within 24 hours.
- K. The Contractor shall maintain a bound log book on site noting all inspections, and repairs of the erosion control devices. Each entry will be signed and dated by the superintendent. The log book will be available for inspection by the Owner's Representative at any site visit. Upon completion of the project the log book will be submitted to the Owner's Representative.

3.12 CLEAN-UP

- A. Upon completion of work of this Section, clean up and leave areas free of debris, excess material, and equipment.
- B. Stockpile excess earth on Owner's property in areas designated by the Owner's Representative.

PART 4 PAYMENT

4.01 MEASURE AND PAYMENT

- A. Measure and payment as specified below. No separate payment will be made for work covered under this section. The cost therefore shall be included in the bid item to which the work is pertained. All excavation is unclassified.
- B. Clearing and grubbing, topsoil stripping and topsoil re-spreading shall not be measured in the field. The bid shall include cost associated with clearing, excavating and replacing topsoil for the contract lump sum.
- C. Rough grading, finish grading and seed bed preparation shall not be field measured but shall include cost of excavation, compaction, placement, scarifying, transportation of materials, ripping, blasting and all other activities necessary to complete the contract lump sum for mass grading.
- D. Rock excavation which includes the removal and disposal of materials and obstructions encountered which cannot be dislodged and excavated with the excavating equipment referenced below without drilling or blasting. Rock excavation is unclassified. No separate payment will be made for rock excavation or any other associated costs required for the excavation of rock.

END OF SECTION

SECTION 02101 SITE FURNISHINGS

PART 1 GENERAL

1.01 SCOPE OF WORK

The project includes improvements to the 2 existing concessions buildings at the Barfield Crescent Park in Murfreesboro, TN. The work includes the addition of HVAC systems, duct work and all electrical requirements, concrete and fencing on the exterior of the buildings, the installation of air curtains, the installation of a grill and hood, and the installation of a grease removal system as shown on the plans and listed in the contract documents.

1.02 The Contractor shall be responsible for obtaining all the local permits required and for notifying Tennessee One Call to locate all the existing utilities.

1.03 RELATED WORK SPECIFIED ELSEWHERE

N/A

PART 2 MATERIAL

2.01 MATERIAL

HVAC System (Complete)
Air Curtains (Complete)
Grill and Hood (Complete)
Big Dipper 4000 Series W 200 IS AGRU or approved equal

PART 3 EXECUTION

3.01 FABRICATION

See plans for details:
HVAC System (Complete)
Air Curtains (Complete)
Grill and Hood (Complete)
Big Dipper 4000 Series W 200 IS AGRU or approved equal

3.02 INSTALLATION

See plans for details

END OF SECTION

SECTION 02200 EARTHWORK

PART 1 GENERAL

1.01 RELATED WORK

- A. Section 01700, Contract Closeout.
- B. All sections of the Murfreesboro Water and Sewer Specifications

1.02 QUALITY ASSURANCE

- A. Testing Laboratory and Soils Engineer:
 - 1. The Soils Engineer's and Testing Laboratory's fees will be paid by the Owner.
 - 2. Have earth borrow fill and structural fill tested and approved by designated testing laboratory before moving it to the job site.
 - 3. Areas where building and paved areas will be located shall be proof-rolled. **The proof-rolling shall be performed in fill areas before fill is placed and in cut areas after excavating to grade.**
 - 4. Soils compaction testing of in-place soil and filled and compacted areas shall be performed by Testing Laboratory in accordance with the specifications.

1.03 SITE CONDITIONS

- A. Existing Conditions:
 - 1. Visit the site and become familiar with existing ground conditions.
 - 2. Do not interrupt existing utilities service facilities occupied and used by Owner or others, except when permitted in writing by Owner's Representative and then only after temporary utility services have been provided.
- B. Environmental Requirements:
 - 1. Provide for surface drainage during the period of construction in a manner to avoid creating a nuisance to adjacent areas. Keep excavation free of water during the entire process of the work, regardless of the case, source, or nature of the water.
 - 2. Trees shall be left undisturbed, insofar as possible.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Embankment Fill Material: Inorganic clay, silty clay, or sandy clay that is free of large roots. If the embankment fill comes from an offsite source, the material shall be approved by the testing laboratory before use.

- B. Topsoil: Free from roots and vegetation as stripped on the site or as approved by the Owner's Representative for material imported to the site.
- C. Granular Fill: Sound, durable, crushed stone meeting the requirements of ASTM C33.
- D. Geotechnical Fabric: Mirafi 500X or approved equal.
- E. Shot-rock Fill: Hard durable, well graded limestone with a maximum particle size of 30 inches and less than 20 percent clay soil as estimated by volume.
- F. Rock-soil Fill: Hard durable, well-graded limestone with a maximum particle size of 24 inches and less than 50% clay soil as estimated by volume.
- G. Soil-rock fill: Hard durable, well-graded limestone with a maximum particle size of 18 inches and less than 70% clay soil as estimated by volume.

PART 3 EXECUTION

3.01 PREPARATION

- A. Protection
 - 1. Provide adequate protection measures to protect workmen and passersby on the site. Fully protect existing buildings, streets and adjacent property throughout operations.
 - 2. Locate existing underground utilities by careful hand excavation. If utilities are to remain in place, provide protection from damage during construction operations.
- B. Rough Grading
 - 1. Prior to placing fill, constructing foundations or excavating, strip entire development area of vegetation, topsoil, roots, and other unsuitable materials as indicated in Section 02110, "Clearing."
 - 2. In areas to be covered by construction, including paving, or to receive fill material, and for a distance of 10 feet out in all directions, proof-roll with a fully loaded tandem axle rubber tired truck. Run truck or roller at normal walking speed so that Testing Laboratory may observe ground at all times. Testing Laboratory will conduct any additional tests which it feels are necessary to determine existing conditions.
- C. Excavation
 - 1. Excavation shall be unclassified, including all forms of rock excavation.
 - 2. Perform excavation to lines and grades on the drawings.
 - 3. Provide shoring, sheeting and bracing to prevent caving, erosion, or gullyng of sides of excavation.
 - 4. Should uncharted or incorrectly charted piping or other utilities be encountered during excavation, consult the Owner's Representative immediately for

directions as to procedure. Cooperate with Owner and/or utility companies in keeping respective services and facilities in operation. Repair damaged utilities to satisfaction of utility owner.

5. After excavation has been performed to the lines and grades shown on the drawings, the subgrade for building sections shall be inspected. Soft spots shall be removed at the direction of the Inspector, and backfilled with embankment material as specified herein at no cost to the Owner. Proof-rolling with a loaded dump truck may be used if determined necessary by the Inspector.

3.02 INSTALLATION

A. Fill Materials

1. All embankment fills shall be placed in loose lifts not exceeding 8 inches and compacted.
2. Shot-rock fill shall be placed in lifts not exceeding 36 inches and compacted by making at least six passes with a caterpillar D8 or equal. The larger rock pieces shall be placed flat and not overlap each other. Additional passes with the bulldozer may be required by the Testing Laboratory to demonstrate the material is sufficiently compacted.
3. Rock-soil fill shall be placed in lifts not exceeding 18 inches and compacted by making at least six passes with a caterpillar D8 or equal. The larger rock pieces shall be placed flat and not overlap each other. If the soil portion of the fill is too wet, it shall be dried and re-compacted or undercut and replaced at no additional cost to the Owner. Additional passes with the bulldozer may be required by the Testing Laboratory to demonstrate the material is sufficiently compacted.
4. Soil-rock fill shall be placed in lifts not exceeding 12 inches and compacted by making at least six (6) passes with a caterpillar 815 or equal. The larger rock pieces shall be placed flat and not overlap each other. If the soil portion of the fill is too wet, it shall be dried and re-compacted or undercut and replaced at no additional cost to the Owner. Additional passes with the compactor may be required by the Testing Laboratory to demonstrate the material is sufficiently compacted.

- B. Compact soil fill beneath roadways and parking areas to 95 percent of the maximum dry density as determined by the Standard Proctor moisture-density test, ASTM D 698.

C. Finish Grading

1. Topsoil and other unsuitable material stripped to the depth encountered shall be spread on areas previously graded and prepared for topsoil or spread in areas designated for special landscape treatment. Stockpile sufficient amounts as required to cover areas to be landscaped with a minimum of 8 inches of material.
2. If the materials excavated on the site do not produce the necessary amount of material satisfactory for topsoil or the formation of the subgrade, as specified, suitable materials from off-site shall be obtained upon the approval of the Owner's Representative.

3.03 FIELD QUALITY CONTROL

A. Inspections

1. An Inspector employed by the Owner's Representative shall examine and approve the placement of all fill. Payment shall be by the Owner.

B. Soil Compaction Tests

1. Field density tests shall be performed in sufficient number to ensure that the specified density is being obtained. Tests shall be in accordance with ASTM D1556, ASTM D2922, ASTM D2937 or by other approved testing methods.
2. Shot-rock, rock-soil, and soil-rock fill placement shall be observed by the Testing Laboratory to evaluate whether the fill materials placement and compaction comply with the specifications.

3.04 PROTECTION

- A. Be responsible for and maintain embankment areas until completion and final acceptance of the project by the Owner.
- B. No silting or washing of material will be allowed to extend beyond the limits of the property. Shall such silting or washing occur, construct and maintain a sedimentary basin at no expense to the Owner.

3.05 CLEANUP

- A. Upon completion of work of this Section, clean up and leave areas free of debris, excess material and equipment.
- B. Stockpile excess earth on Owner's property in areas designated by Owner's Representative.

END OF SECTION

SECTION 02245 FINISH GRADING

PART 1 GENERAL

1.01 GENERAL REQUIREMENTS

- A. Mass grading of entire site to elevation denoted on plans.

1.02 RELATED WORK SPECIFIED ELSEWHERE

- A. Section 02210, Site Preparation

1.03 DESCRIPTION OF WORK INCLUDED

- A. Loading, transporting, and spreading of topsoil.
- B. Finish grading of topsoil.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Topsoil stripped and stored under work of Section 02221 shall be used for work of this section. Additional topsoil, if required, is to be supplied by the Contractor at no cost to the Owner.
- B. Additional topsoil shall be surface soil with a known local capability of satisfactorily supporting lawn growth. It shall be free of any admixture of subsoil, stones, lumps, clods of hard earth, plants and their roots, sticks, and other extraneous matter. Topsoil shall not be used for planting operations while in a frozen or muddy condition.

PART 3 EXECUTION

3.01 GRADES

- A. Finish grades shall be the proposed final grades shown on the drawings. Lawns shall be finish graded to meet walks and adjoining surfaces after settlement so that no water pockets or ridges will remain.
- B. All lawn and planting areas are required to have been established 8 inches below finish grade by the Contractor. Verify the grades and bring any discrepancies to the attention of the Owner's Representative who shall take steps to have them corrected by the responsible parties.

3.02 INSTALLATION

- A. Loosen subgrade to a depth of 2 inches over all lawn areas by means of a cultimulcher or approved equal.
- B. Spread topsoil over lawn areas to a minimum compacted depth of 6 inches and 8 inches on the ballfield so that after natural settlement and light rilling the completed work will conform to the lines, grades, and elevations shown on the drawings.

- C. Finish grade for all swale grades as shown on the plans are to be blue-top stakes, and swale subgrades are to be re-established by grading Contractor prior to finish grade operation. Inspection and approval by the Owner's Representative prior to topsoil placement for seeding or sodding is required.
- D. Where not otherwise indicated, project size areas outside of buildings within the limits of grading shall be given uniform slopes between points for finished grades which are shown or between such points and existing grade, except that vertical curves or roundings shall be provided at abrupt changes in slopes.
- E. After spreading, topsoil shall be lightly compacted, as necessary, to minimize settlement.

PART 4 PAYMENT

4.01 MEASURE AND PAYMENT

- A. No separate payment will be made for work covered under this section. The cost therefore shall be included in the bid items to which the work pertains.

END OF SECTION

SECTION 02485 GRASSING AND PLANTING

PART I – SCOPE

- 1.01** This item shall consist of performing all labor and furnishing all materials to do the grassing and planting work complete as shown on the plans and specified herein, including ground preparation and fertilizing, seeding, hydroseeding and mulching, mulching, erosion control netting, tree wells and tree root protection, vines, shrubs and tree planting and transplanting. This work shall also include the maintenance and watering and any necessary replanting.

All areas of vegetation which are scarified or disturbed by any mechanism during the construction activities will require grassing and planting to provide vegetative cover. Any areas that fails to develop a successful stand following seeding will be re-seeded at the Contractors expense for a period of one year after placement.

Grassing and planting in residential lots or tracts or public facilities (i.e. schools, parks, etc.) not including public right-of-way or easements shall be performed by a professional landscape company and be paid from the landscaping unit item. Landscaper shall perform a pre-construction interview with all residential property owners to discuss those landscaping materials that may be salvaged by relocation during the project and which material will be destroyed as part of construction operations.

The Contractor shall provide access to or maintain all lawn cutting and landscaping maintenance to areas that are cut off during the construction activities to the satisfaction of the individual property owner.

- 1.02** The area within the limits shown on the plans, except the areas occupied by structures, shall be planted with a mixture of grassing seed and mulched as herein specified.
- 1.03** Vines, shrubs and trees shall be placed as shown on the planting plan or as authorized by the Engineer.
- 1.04** Grassing shall be seeding and mulching or hydro-seeding and mulching. Mulching shall be straw or hay bales as shown on the plans or specified in the Special Conditions.

PART II – GENERAL

2.01 GROUND PREPERATION

- A. Strip all topsoil to its entire depth, a minimum of 6" inches from all areas to be cut or filled. Contractor may select any method but shall comply with the following:
1. Scrape areas to be stripped clean of brush, wood, and grass, roots over ½ inch diameter, and other foreign materials.
 2. Do not strip topsoil in muddy condition.
 3. Do not strip areas indicated not to be disturbed.
 4. Avoid including subsoil, debris, stones over 2 inches, and other extraneous matter in topsoil.

5. Leave areas free of trash, debris, and foreign material.
 6. Remove all topsoil from areas over which any construction is to be placed, such as buildings, walks, drives, roads, parking areas, etc.
 7. Store topsoil in an approved location for use in finish grading and protect it against loss and from admixture of debris.
- B. After all other construction work is completed and the surface of the ground finished to subgrade the topsoil that was removed and stockpiled shall be spread over the area to be planted. This topsoil shall be uniformly spread in a layer not less than eight inches thick. Additional topsoil from other sources shall be furnished by the Contractor if necessary, to cover the area to be planted to the specified depth.
1. After the topsoil is spread the surface of all areas to be planted shall be prepared by plowing and discing in both directions, when feasible, to a depth of not less than four (4) inches. After removal of all large particles, which cannot be broken, the surface shall then be harrowed and cultivated. Plowing and harrowing shall be performed with proper equipment and in such manner as to break up all clods, lumps, or earth balls, and to remove all rocks, stumps, large roots, or other particles so as to provide a suitable planting bed. Hand tools shall be used in inaccessible small areas.
- C. The entire area to be planted shall be carefully finished to exact line and grade before planting. Care shall be used to shape the surface of the ground properly around the structures.
- D. Topsoil to be furnished shall be fertile, friable, natural, and typical of that location. It shall be without admixture of subsoil and shall be reasonably free of stones, lumps, plants, roots, sticks, and other extraneous matter, and shall not be used for planting operations while in a frozen or muddy condition.
- E. All soil to be used in a tree, shrub and vine pit for planting operations shall be conditioned by thoroughly mixing one part by volume of peat, one part by volume of rotted manure and four parts by volume of topsoil.

F. FERTILIZER

1. Manufactured fertilizer shall be standard commercial products and shall not contain less than the percentages by weight of the ingredients set out in the following table:

Nitrogen	N	8
Phosphorus	P ₂ O ₅	8
Potash	K ₂ O	8

All fertilizer shall be transported in containers, which will insure proper protection and handling.

- i. Agriculture limestone shall be crushed or ground to such a degree of fineness that 90 percent of the material will pass through a 10 mesh screen and not less than 50 percent of the material will pass

through a 60 mesh screen. All such limestone shall also have a neutralizing value of 90 percent calcium carbonate or better.

- ii. Basic slag shall be ground open-hearth basic slag containing not less than the percentage by weight of the following ingredients:

Total Phosphoric Acid.	..6.00	Iron Oxide.....	18.50
Magnesium Oxide.....	5.50	Calcium Oxide.....	4.00
Manganese Oxide.....	3.00	Neutralizing Power...	80.00

At least 80 percent shall pass through a 100-mesh screen and at least 90 percent shall pass a 50-mesh screen.

- iii. Fertilizers shall be applied uniformly into the areas to be planted or improved in such amount and to such depth and according to the methods indicated in the specifications for the various ground covers. The fertilizer shall be well-pulverized and free of lumps when applied. In no case shall full strength fertilizer be permitted in direct contact with roots. When fertilizers are applied hydraulically they must be diluted sufficiently as directed so that no damage is done to either seed or established grasses and legumes. Agricultural limestone and basic slag shall be applied in a separate operation but may be incorporated in soil with fertilizers in one operation.

G. SEEDING

1. Seeding shall consist of furnishing, inoculating and sowing seeds and covering, compacting and maintaining the seeded area.
2. All seed used shall meet the requirements of these specifications and comply with applicable state laws and rules and regulations promulgated thereunder. Each kind of seed for use either pure, or as a part of mixed seedlings, shall be separately packed and delivered to the project in standard seed-tight shipping bags, all prominently identified. Each bag shall bear a tag or label certifying to contents, test and analysis. Seed furnished shall be hulled and scarified where indicated by the letter symbols "H" and "S" respectively. All seeds of legumes, as indicated by letter symbol "N" shall be inoculated just before use, with the appropriate commercial culture manufactured by a reputable concern. Such material shall be approved and used according to the manufacturer's instructions. The following tables specify the quantity by weight of the different seeds required when sown alone, their purity and germination.

<u>Common Name</u>	<u>Per Acre</u>	<u>Lbs. Required Purity</u>	<u>Minimum Germinable</u>
Bermuda Grass (Unhulled)		30	99
Bermuda Grass (Hulled) 20 HS		99	85
Kentucky Blue Grass		40	85
Kentucky 31 Fescue		30	99
Annual Lespedeza		60 HN	95
Reseeding Crimson Clover		30 HN	99
White Clover		10 HN	98
Pensacola Bahia	40	90	85

3. Seed mixtures shall be applied at the rate in pounds per acre and with the seasonal limitations shown in the following table:

<u>Seeds</u>	<u>April-June</u>	<u>July-August</u>	<u>Sept.-March</u>
Bermuda Grass (Hulled) 12	5	6	
Kentucky Blue Grass		6	
Kentucky 31 Fescue	20	20	20
Annual Lespedeza	10		
Reseeding Crimson Clover		30	30
White Clover	4		
Pensacola Bahia	20	20	

- i. The Contractor shall notify the Engineer at least twenty-four hours in advance of the time he intends to start inoculating and mixing seed or begin sowing seed and shall not proceed with such work until permission to do so has been given.
- ii. Fertilizer shall be applied as specified in Section 2b and mixed to the depth of preparation as soon as applied. It shall be applied mechanically by approved hydraulic equipment. The seedbed for all mixed seedings shall be fertilized initially with two tons of agricultural limestone, or basic slag and 1500 pounds of grade 8-8-8 fertilizer per acre.
- iii. Preparatory to sowing, the seed accepted for use shall be inoculated as provided herein. Each kind of seed shall be inoculated separately with the appropriate commercial culture according to instructions of the manufacturer of the material accepted for use, then allowed to surface dry to a free flowing state before mixing or sowing. In general, no greater quantity of seed shall be inoculated at one time than can be sowed by the end of the following working day. All inoculated

seed shall be protected from the sun and direct contact with commercial fertilizers.

- iv. Sowing of seed shall follow promptly after incorporation of fertilizer. Sowing shall be done uniformly at the specified rate by approved mechanical seeders. Hand operated cyclone sowers will be considered mechanical seeders. No sowing shall be done in windy weather, when the prepared surface is crusted, or when the ground is frozen, wet or otherwise in a nontillable condition.
- v. Immediately after sowing, the seeded area shall be harrowed, dragged, raked or otherwise worked so as to cover the seed with a layer of soil ¼-inch thick. Care shall be exercised during covering operations to preserve the line, grade and cross-section of the seeded areas and to see that areas adjacent to pavement, walks, etc. are not left higher than the paved surface. After the seed has been properly covered the seedbed shall be compacted immediately by means of a cultipacker, light roller or approved drag. Rolling or covering of seed may be omitted when seeding is done hydraulically and mulched.
- vi. The Contractor shall water, fill washes and otherwise protect and maintain the seeded areas until the contract is accepted. Damage by either pedestrian, vehicular traffic or other causes shall be repaired by the Contractor. It shall be the responsibility of the Contractor to establish and maintain a satisfactory stand of grass until final acceptance of the project. A satisfactory stand of grass shall be defined as a complete cover of living grass (limited to the species of seed that are expected to germinate in the current season). If a satisfactory stand of grass is not established, the area shall be re-seeded by the Contractor. Seeded areas shall be mowed as required and when weeds or other undesirable vegetation threaten to smother the planted species.

H. MULCHING

1. This work shall consist of mulching (covering with hay or straw) those areas indicated on the plans to be grassed in accordance with these specification.

2. Mulching material shall consist of hay or straw and asphalt complying with the following:
3. Hay shall be applied at the rate of not less than two tons per acre may be native hay of Sudan grass, broom sedge, weeds, grass clippings or any other acceptable material. Low grade, musty, spoiled, partially rotted hay unfit for animal consumption is acceptable. Hay or straw shall be applied with a moisture content of not more than 15 percent of if the moisture content exceed 15 %, a proportionate increase shall be made in the rate of application.
4. Straw shall be threshed straw of oats, wheat, or rye, applied at the rate of not less than 2-¼ tons per acre.
 - i. Mulching materials which contain matured seeds of species which would volunteer and be detrimental to the proposed planting shall not be used.
 - ii. Asphalt shall be suitable for mulching and shall contain no petroleum solvents or other diluents toxic to plant growth. It shall be a homogeneous emulsification of refined asphalt suitable for spray application with or without dilution with water and of a type approved by the Engineer. Asphalt shall be included in the mulch only at locations specified or shown on the plans.
 - iii. Straw and hay mulch shall be applied with a mechanical mulch spreader with an attachment designed to effectively apply an asphalt adhesive to the mulch material and to blow the asphalt sprayed mulch by means of a high velocity air stream over the prepared area to form a uniform porous stable blanket held in place by the asphalt adhesive. The spreader shall be designed to break up balls or clusters of the mulch and apply it evenly and uniformly over the surface so as not to exclude penetration of sunlight.
 - iv. Immediately after the area to be mulched has received ground preparation and specified planting, the mulch shall be applied at the rates specified above. Mulch which is too fresh, or excessively brittle, or so decomposed as to retard growth of grass will not be acceptable. The asphalt adhesive shall be applied at a rate of 200 to 250 gallons per acre of undiluted asphalt.

- v. Mulch shall not be applied during period of high winds or other unfavorable conditions. Care shall be exercised to protect the public, adjacent property, buildings, curbs, sidewalks, and the like from discoloration by the asphalt adhesive. The Contractor shall be responsible for any such damage to public or private property. Any damage or discoloration to structures shall be repaired without delay at the Contractor's expense.

I. HYRO-SEEDING AND MULCHING

1. Hydro-seeding and mulching shall consist of sowing seeds by hydraulic equipment and covering, compacting, mulching, and maintaining seeded areas. Seeds and hydro-seeding shall comply with applicable portions of Section 2d. Hydro-seeding and mulching shall be performed at the locations and at the time shown on the plans and in conformity with these specifications.
2. The following listed specifications shall apply to hydro-seeding and mulching:

Ground Preparation	Section 2a
Fertilizer	Section 2b
Seed	Section 2c
Seasonal Limitations	Section 2c
Mixing & Applying Seeds	Section 2c
Care During Construction	Section 2c
3. Hydro-seeding shall be performed by approved equipment designed for the purpose. The equipment shall be designed to pump a water-seed-inoculant uniformly over the areas to be seeded. It shall include a power driven agitator to keep the mixture uniform during application. The equipment shall be of sufficient force and capacity to apply a uniform application to the upper limits of all cut slopes and the lower limits of all fill slopes. For hay or straw mulch, equipment shall be as specified in Section 2d.
4. Four times the manufacturer's recommended rates of inoculant culture shall be used. The seeds shall be placed in the culture solution and mixed by mechanical agitator in the hydraulic feeder. Seeds shall be applied at the rate specified in Section 2c.
5. Hay and straw mulch shall be applied in the manner and at the rates specified in Section 2d immediately after hydro-seeding.

J. SODDING

1. GENERAL

Sod shall be set or reset only when the soil is moist and favorable for growth. No setting shall be done between December 1 and February 1 unless weather and soil conditions are considered favorable and permission is granted by the Engineer

Sod removed from such area as lawns, yards, etc, shall be cut, handled and stored so that the sod can be reset in the same location from which it was removed. No interchange of sod will be permitted unless approved by the Engineer. Unless reset immediately after cutting, sod shall be stacked in piles and kept moist until reset. Sod shall be reset within 7 days after removal unless specifically permitted by Engineer.

2. PREPARATION

The area to be sodded shall be brought to the lines and grades shown on the plans or as directed by the Engineer. The surface of the ground to be sodded shall be loosened to a depth of not less than 1" with a rake or other device. If necessary the area shall be sprinkled until saturated for a minimum depth of 1" and kept moist until sod is placed. Fertilizer shall be applied at the rate of 12 pounds of Grade 10-10-10 per 1000 square feet.

3. APPLICATION

Sod shall be placed as soon as practical after removal from the point of origin and shall be kept in a moist condition during the interm. The sod shall be carefully placed by hand on the prepared ground surface with the edges in close contact and as far as possible in a position to break points. Each strip of sod installed shall be fitted and pounded into place using wood tamps or other implements. Immediately after placing the sod shall be thoroughly wetted and rolled with an approved roller or hand tamped. On slopes of 2:1 or steeper pinning or pegging may be required.

K. EROSION CONTROL NETTING

1. Erosion control netting shall be applied to seeded mulched ground areas, which have a slope greater than 5 to 1. Erosion control netting shall be jute, cotton or plastic material.
2. Jute netting shall be woven from undyed and unbleached plain single jute yarn, averaging 130 pounds per spindle of 14,400 yards. The yarn shall be loosely twisted and shall not vary in thickness by more than ½ its normal diameter. The finished mesh shall be of uniform, open (nominal one-inch) plain weave, furnished in rolls as follows:

Width: 48 inches, plus or minus one inch, with 78 warp ends per width of cloth.

Length: Convenience lengths, 50 yards minimum, with 41 weft ends per yard.

Weight: Average 1.22 pounds per linear yard, plus or minus five percent.

3. Cotton netting shall be woven from undyed and unbleached cotton yarn. The finished netting shall be of uniform open weave forming an open rectangular or square mesh of $\frac{1}{4}$ to $\frac{1}{2}$ inch, and furnished in rolls with the following characteristics:

4.

Width: 48 inches minimum.

Length: Convenient lengths, 50-yard minimum.

Weight: Minimum average 0.12 pounds per linear yard of 48-inch material.

5. Plastic netting shall be extruded polypropylene or other acceptable plastic material, extruded in such a manner as to form a net with $\frac{1}{4}$ to $\frac{1}{2}$ inch rectangular or square openings with strands of approximately nine (9) millimeters thickness. The netting shall be furnished in rolls meeting the following characteristics:

6.

Width: 48 inches, minimum.

Length: Convenient lengths, 50 yards minimum.

Weight: Minimum average five (5) pounds per 1,000 square feet.

7. Staples to hold erosion control netting in place shall be U-shaped and shall be approximately six (6) inches long and one inch wide. Machine made staples shall be of No. 11 gauge or heavier steel wire. Hand made staples shall be made from 13 inch lengths of No. 9 gauge or heavier steel wire.
8. Erosion control netting shall be placed immediately after the completion of ground preparations, fertilizing, seeding, and mulching in accordance with these specifications. The netting strips shall be rolled out flat, parallel to the direction of flow. When two or more strips are required to cover an area, they shall overlap three inches, minimum. Ends of strips shall overlap six inches, minimum, with the upslope section on top. The upslope end (anchor slot) of each strip shall be buried in 6 inch vertical slots, and soil tamped firmly against it. When, in the opinion of the Engineer, conditions warrant, any other edge exposed to excessive flow shall be buried similarly.
9. The netting shall be spread evenly and smoothly, and in contact with the mulch at all points. It shall be tamped or stapled to assure

close contact with the mulch. Each strip shall be stapled in three rows; each edge and the center, spaced at not more than three feet longitudinally. Ends of strips shall be stapled at nine-inch intervals across their width.

10. Care during construction shall consist of protection and of repairs made necessary by erosion, wind, fire, and/or other causes. Repairs shall be as such as to re-establish the condition and grade of the soil as existing prior to application of the netting, restoring damaged ground preparation, refertilization and replanting of damaged areas, without additional compensation. The period of care shall continue until acceptance of the contract. Care shall be performed without additional compensation.

L. EXCELSIOR BLANKETS

1. Excelsior blankets may be used instead of erosion control netting and mulching on ground areas having a slope greater than 5 to 1 or at other locations.
2. Excelsior blankets shall consist of a machine-produced mat of curled wood excelsior of 80 percent six inches or longer fiber length, with consistent thickness and the fiber evenly distributed over the entire area of the blanket. The topside of each blanket shall be covered with a photodegradable extruded plastic mesh. The blanket shall be made smolder resistant without the use of chemical additives.
3. The area to be covered by the blankets shall be properly prepared, fertilized, and seeded before the blanket is applied. When the blanket is unrolled, the netting shall be on top and the fibers in contact with the soil over the entire area. In ditches the blankets shall be applied in the direction of the flow of water, butted snugly at ends and sides and stapled. On slopes, the blankets shall be applied either horizontally or vertically to the slope and ends and sides butted snugly and stapled.
4. Staples shall be made of steel wire, 0.091 inches in diameter or greater, "U" shaped with legs six inches in length and a one-inch crown. Size and gauge of staples used shall vary with soil conditions. The staples shall be driven vertically into the ground, spaced approximately two lineal yards apart, on each side, and one row in the center alternately spaced between each side (60 staples on each blanket) a common row of staples shall be used on adjoining blankets.

M. TREE WELLS AND ROOT PROTECTION

1. This section shall cover (1) the protection of selected trees, shrubs or other woody plants by tree wells so constructed as to protect the

root system and (2) the placing of porous material, consisting of 3/8 to 5-inch aggregate to such depth around the roots as provided by the plans or directed. Tree wells shall be constructed of concrete, rubble masonry, or brick masonry as may be provided on the plans. Such construction shall be performed in accordance with the design and details indicated on the plans and with applicable sections of these specifications.

2. All excavation incidental to and necessary for constructing tree wells shall be so conducted as to avoid injuring the root system. No backfill of any nature shall be placed by the Contractor above the root spread of a tree or plant which it is desired to preserve until a fill of porous material not less than three inches in depth or as directed has first been placed above its roots.
3. The area for tree root protection shall be first cleaned of all vegetation and porous material shall be then spread loosely over the required area. Following the spreading of the porous material for tree root protection, a minimum of from 4 to 5 inches of topsoil shall be spread above the porous fill to bring the area to the finished grade lines designated.
4. Care shall be taken so that trees or shrubs, which are to be preserved in place, are not scarred or damaged. The root area to be protected shall be the area of ground surface lying within the periphery of the limb spread of the tree.

N. SHRUBS AND TREES

1. Samples of materials proposed to be furnished hereunder shall be submitted to the Engineer for inspection prior to delivery of materials. All materials delivered hereafter shall conform to accepted samples, which shall be stored on the site and protected until the delivery of like materials has been completed.
2. Shrubs and plants shall be inspected for quality, size and variety, either at the place of growth or after delivery at the site of the work; as authorized by the Engineer. No shrubs or plants rejected at place of growth or at the site of the work shall be used or paid for under the item. Certificates of inspection as required by federal, state or other authorities shall accompany each shipment.
3. Plants shall be freshly dug, vigorous, of normal habit of growth, free of disease, insects, insect eggs, and larvae. Plants shall be nursery grown under climatic conditions similar to those in locality of project. The height of plants and branching shall be measured when branches are in normal positions. Caliper shall be diameter of trunk one foot above surface of ground and shall be the determining measurement for trees. Number of canes specified

shall be the minimum acceptable. A cane shall be considered a primary stem, which starts from or close to the ground or at a point not higher than one-fourth of the height of the plant. Plants shall conform to measurements of plant list in the plans, except that oversize plants may be used at no increase in contract price. Plants shall not be pruned prior to delivery except upon special approval. The variety of any shrub or plant shown on the plans may be changed prior to delivery to another variety of equal cost, at the option of the Engineer.

4. Stakes for supporting trees shall be of sound wood of uniform size, capable of standing in ground at least two years. They shall be at least two inches in diameter and not less than nine feet in length, except that for trees under six feet in height stakes shall be not less than 8 feet in length. Ties shall be strips of canvas not less than three inches in width and ten ounces in weight or equal fabric. Wrapping materials shall be of first quality burlap or waterproof crepe paper of not less than 6 or more than ten inches in width and of suitable strength.
5. Scientific and common plant names as used on the plans conform to Standardized Plant Names prepared for the American Joint Committee of Horticulture Nomenclature. Names of varieties not included therein conform generally with names accepted in the nursery trade. Substitutions will not be permitted, except that if proof is submitted that any plant specified is not obtainable, a proposal will be considered for use of nearest equivalent size or variety with an equitable adjustment of contract price. The plants to be furnished and planted are shown on the plans.

O. DIGGING AND HANDLING PLANTS

1. The roots of baled and burlapped plants shall be provided with firm, natural balls of soil, of a diameter not less than specified, and of a depth to encompass sufficient fibrous and feeding roots to insure full recovery and development of plants. No plant moved with a ball shall be planted if the ball is cracked or broken, except upon specific approval.
2. Bare rooted plants shall have a spread of roots not less than specified, and a depth sufficient to insure full recovery and development of plants. Bare roots shall be puddled.

P. PLANTING SHRUBS AND TREES

1. Remove rock or other underground obstructions to the depths necessary to permit proper installation of planting, unless other locations are selected by the Engineer.

2. Stake plant locations and secure approval before excavating pits, making any adjustments necessary; locate no plants, except vines, closer than two feet to pavement or structure.
3. Excavate pits in circular outline, with vertical sides, for all plants except hedge plants.
4. Tree pits shall be at least two feet greater in diameter than diameter of ball or spread of roots; and at least two feet depth. Shrub pits shall be at least one foot greater in diameter than diameter of ball or spread of roots and at least one foot in depth.
5. Set plants in center of pits, placing ball or roots on a layer of topsoil at least two inches in depth, adjusting depth as necessary so that crown of plant will stand at finished grade; set hedge plants, evenly spaced, along center line of trench. Compact soil around balls or roots of plants and water thoroughly. Form ridge of soil around edge of pit to facilitate watering. Use clean soil excavation from plant pits between shrub pits, if arranged in-groups, as necessary to bring planted areas to finished grade, and dispose of excess excavated soil as directed; cultivate between pits to a depth of six inches, rake smoothly and neatly outline.
6. Prune plant in accordance with standard horticultural practice. Mulch plant pits one inch deep, using well-rotted manure lightly incorporated in soil.
7. Stake trees as follows: setting each stake vertically and at least one-third of its length in ground. approximately 12 inches from trunk; guy trees to upper end of stakes with canvas ties folded to a 1-½-inch width. Single stake trees under two inches in caliper if so indicate by drawings. Double stake each tree two or three inches in caliper setting each stake vertically at least one-third of its stake with canvas ties folded to one and one-half inches in width.
8. Wrap trunk of trees, spirally to height of second branches and tie the wrapping in place with suitable cord.

Q. GUARANTY AND REPLACEMENTS

1. Replace during the next planting season all dead plants and all plants not in vigorous, thriving condition and at no additional cost. Plants used for replacement shall be of the same kind and size specified in plant list and shall be furnished, planted and mulched as specified.
2. The Contractor shall maintain planting at his own expense until final acceptance of the project or until 90 days after planting. Maintenance shall consist of preserving, protecting, watering,

replacing, and such other work as may be necessary to keep the work in a satisfactory condition.

R. PAYMENT

1. No separate payment will be made for grassing and planting performed under these specifications but this work shall be included in the unit prices for installation of the water or sewer or gas lines and/or the lump sum payment for the treatment Plant/Pumping Station/other facilities, as applicable, unless unit prices are provided within scheduled items of the Proposal.

S. TRENCH SETTLEMENT AND EROSION MAINTENANCE REQUIREMENT

1. Contractor shall be responsible for all settlement in areas that are disturbed within the project limits. Any soil erosion or settlement the occurs and requires importing topsoil to the affected property shall be done for a period of 2 years after acceptance of the project.
2. Contractor shall respond within 15 days to Owner's request to rectify any settled or eroded areas. Any lack of responsiveness shall result in calling of the Contractor's bonding company.
3. Contractor should account for having to import additional topsoil for settlement and erosion repair as well as resowing of seed that has washed out in eroded areas after final acceptance of the project. Provisions should be made to incorporate the cost associated with this provision into the bid costs as this warranty item is not a separate pay item.

END OF SECTION

SECTION 02575 SIDEWALKS, PAVEMENT AND SURFACING

PART I- SCOPE

- 1.01** The work covered by this Division shall consist of the construction in place of new access roads, driveways, concrete sidewalks, curb and gutter, pavement, and surfacing, or the replacement of concrete sidewalks, driveways, curbs and gutters, and surfacing of whatever nature which have been removed to permit the construction on pipe lines or other work, all at the locations and to the lines and grades shown on the plans or designated by the Engineer. All replacements shall be of the same type construction as was removed.
- 1.02** Where sidewalks, driveways, curbs, and gutters, or surfacing of whatever nature have been removed by the Contractor beyond the limits called for in the plans and specifications or as set by the Engineer, or have been damaged through negligence or carelessness of the Contractor's forces, they shall be replaced in accordance with these specifications at the Contractor's expense.
- 1.03** Where the surface of graveled or similarly surfaced driveways or streets is removed by the Contractor, either within or without the construction limits or have been damaged by the Contractor's forces, they shall be replaced with the same materials that were removed or damaged at the Contractor's expense as an incidental part of the work.
- 1.04** On unit price contracts where sidewalks, curb and gutter, paved driveways or paved streets are removed within the construction limits as specified and with the consent of the Engineer, they shall be replaced in accordance with the applicable requirements of this Division and shall be paid for in the manner specified in this Division.
- 1.05** On lump sum contracts, no separate payment will be made for the construction or replacing of sidewalks, pavement and surfacing, nor for other work performed under this Division.

PART II – MATERIALS

2.01 GENERAL

- A. Concrete work in the construction or replacement of sidewalks, driveways, curbs and gutters, and road pavement shall be constructed of plain concrete, meeting all of the applicable requirements. Concrete shall be Class A. Concrete forms shall be of wood or metal, shall be straight and free from warp, and shall be of sufficient strength, when in place, to hold the concrete true to line and grade without springing or distortion, and shall conform to the applicable requirements of Division II. The quality and suitability of steel forms shall be accepted by the Engineer prior to their use in the work. Bituminous preformed joints ½-inch thick shall be furnished and installed at points herein specified or shown on the plans. Preformed expansion joints shall conform to the requirements of ASSTHO Specification Designation M33 and M153.
- A. Surfacing of graveled or similarly unpaved driveways or roads for construction or replacement shall consist of hard, durable pit run gravel, crushed stone or chert of suitable gradation for road surfacing, and shall be accepted by the Engineer prior to being delivered to the site of the work.

- B. Materials for the construction or replacement of bituminous pavements shall be furnished in accordance with the current applicable standard specifications of the State Highway Department of the state in which the work is located for each type or kind of pavement to be constructed or replaced and at the depths indicated on the plans.

2.02 CONCRETE CONSTRUCTION

- A.. Excavated area beneath concrete sidewalks, driveways, streets, curbs and gutter and roads shall be backfilled where necessary and thoroughly compacted to the required grade, slope and density in the manner described in these specifications. The final subgrade surface shall be compacted to an even density and firmness and shall be smooth and true to line and grade prior to placing concrete.
- B. New concrete sidewalks and curb and gutter shall be Class B concrete, unreinforced, as specified in these specifications; constructed to the width, thickness and length shown on the plans. New sidewalks shall be four feet in width and 4 inches in thickness unless otherwise shown on the plans.
- C. Concrete sidewalks, driveways, curb and gutter being replaced shall be Class B concrete, unreinforced, as specified in these specifications six inches thick and of the same width, length, shape and grade as the section removed. Concrete pavement in streets and roads shall be replaced to the original size, shape and grade with Class B concrete pavement eight inches thick.
- D. Concrete side forms shall be carefully set with their top true to line and grade of the finished work and shall be rigidly held in place by stakes or braces. Forms shall be cleaned and oiled before they are set in place. Subgrade and forms shall be approved by the Engineer just prior to concrete placement, after which the subgrade shall be dampened, if necessary, and the freshly-mixed concrete placed in the amount required to fill the area within the forms to the proper finished grade in one course. The concrete shall be thoroughly tamper or vibrated, struck off with an approval straightedge and floated with a wooden float true to the required grade and slope. The finished surface shall have a surface tolerance of not more than ¼-inch in ten feet . Preformed bituminous expansion joints shall be installed where located in the sections removed, or where shown on the plans or directed by the Engineer on new work.
- E. All completed concrete surfaces shall be immediately covered with wet burlap or other approved material and kept continuously damp for a period of not less than five (5) days, and shall be protected from damage during the curing process and thereafter until finally accepted. Any section that is damaged during construction or before final acceptance shall be replaced in a satisfactory manner by the Contractor at his own expense. No pedestrians or vehicular traffic shall be allowed on concrete walks or paving during the curing period and in no case less than five (5) days after placement.

2.03 HIGHWAY CROSSINGS

- A. Where it is necessary to cross, cut, destroy, or replace sections across or along highways owned or maintained by the State Highway Department, the Contractor shall make all

preliminary arrangements with the State Highway Department and shall obtain all necessary permits and licenses and shall provide all bonds or deposits. The Contractor shall comply with all rules and regulations of the State Highway Department applicable to the work, and shall furnish materials and perform all work in accordance with any specifications which may be furnished to the Contractor by the State Highway Department.

2.04 STREET CROSSINGS

- A. Where pipe trenches are cut across or along existing street or alley pavement or surfacing, they shall be backfilled in the manner specified in these specifications and traffic restored as quickly as possible by the construction of a temporary surface of crushed stone or bituminous material, as applicable. The Contractor shall maintain such surfaces under traffic until the permanent surfacing has been placed. Replacement bituminous pavement shall have a thickness equal to that removed but shall in no case be less than three inches in thickness. Replacement concrete pavement shall be of the thickness and type shown in Paragraph 5.03 (c) of these specifications.
- B. Where pipelines cut across or along existing unimproved or graveled streets or alleys, they shall be backfilled in a manner specified in these specifications and traffic restored as quickly as possible by placing at least four inches of pit-run gravel, crushed stone, or chert surfacing. The Contractor shall maintain the surfacing in good condition until acceptance of the work.
- C. All excess materials and debris shall be removed from the site of the work and the areas left in a neat and workmanlike condition.

2.05 NEW UNPAVED ACCESS ROADS AND DRIVEWAYS

- A. New unpaved access roads and driveways shall be constructed with a surfacing of pit-run gravel, crushed stone, or chert placed to a thickness of 4 inches unless otherwise shown on the plans. It shall be spread, leveled, compacted, and maintained in good condition until final acceptance of the work.

2.06 NEW PAVED ROADWAYS AND DRIVEWAYS - GENERAL

- A. Base course and pavement of new roadways and driveways shall be as specified on the plans and the Proposal of scheduled items.

2.07 PAVING QUALITY REQUIREMENTS

- A.. General: In addition to other specified conditions, comply with following minimum requirements:
- B. Test in-place asphaltic concrete courses for compliance with requirements for density, thickness and surface smoothness.
- C. Provide final surfaces of uniform texture, complying with required grades and cross-sections.

- D. Take not less than 4 inch diameter pavement specimens for each completed course, from locations as directed by the Owner's Representative.
- E. Repair holes from test specimens as specified for patching defective work.
- F. Density
 - 1. Compare density of in-place material against laboratory specimen of same asphaltic concrete mixture, when subjected to 50 blows of standard Marshall hammer on each side of specimen.
 - 2. Minimum acceptable density of in-place course material is 97 percent of the recorded laboratory specimen density.
- G. Thickness: In-place compacted thickness will not be acceptable if exceeding following allowable variation from thicknesses shown on drawings:
 - 1. Base Course: 1/2 inch plus or minus.
 - 2. Surface Course: 1/4 inch plus or minus.
- H. Surface Smoothness:
 - 1. Test finished surface of each asphaltic concrete course for smoothness, using a 10 foot straightedge applied parallel to and at right angles to centerline of paved areas.
 - 2. Check surfaced areas at intervals directed by the Owner's Representative.
 - 3. Surfaces will not be acceptable if exceeding the following:
 - a) Base Course: 1/4 inch in 10 feet.
 - b) Surface Course: 3/16 inch in 10 feet.
 - c) Crowned surfaces: Test crowned surfaces with a crown template, centered and at right angles to the crown. Surfaces will not be acceptable if varying more than 1/4 inch from the template.

2.08 SUBMITTALS

- A. Samples: Provide samples of materials for laboratory testing and job-mix design as required by the Owner's Representative.
- B. Certificates:
 - 1. Provide certificates, in lieu of laboratory test reports.
 - 2. Certify that materials comply with specification requirements.
 - 3. Signed by asphaltic concrete producer and Contractor.

2.09 JOB CONDITIONS

- A. Weather Limitations: (Variation must be approved by the Owner's Representative).

- B. Apply bituminous prime and tack coats only when the ambient temperature in the shade is 50 degrees Fahrenheit and when the temperature has not been below 35 degrees Fahrenheit for 12 hours immediately prior to application.
- C. Do not apply when the base surface is wet or contains an excess of moisture which would prevent uniform distribution and the required penetration.
- D. Construct asphaltic concrete surface course only when atmosphere temperature is above 40 degrees Fahrenheit, when the underlying base is dry, and when weather conditions do not otherwise prevent proper handling or finishing of the surface course.
- E. Base course may be placed when air temperature is not below 30 degrees Fahrenheit and raising, when acceptable to the Owner's Representative.
 - 1. Grade Control: Establish and maintain the required lines and grades, including crown and cross-slope for each course during construction operation.
 - 2. Traffic Control:
 - 3. Maintain vehicular and pedestrian traffic during paving operations, as required for other construction activities.

F. NEW PAVED ROADWAYS AND DRIVEWAYS - PRODUCTS

- a. Materials
 - i. Aggregate Base: Tennessee Department of Transportation (TDOT) Standard as noted on detail.
 - ii. Prime Coat: Cut-back liquid asphalt.
 - iii. Tack Coat: Emulsified asphalt.
- b. Asphalt Aggregate Mixtures
 - i. Job Mix Criteria:
 - 1. Comply with the mix requirements of TDOT Standard as noted on details.
 - 2. Maintain material quantities within allowable tolerances of the governing standards
 - ii. Traffic and Parking Marking Materials
 - 1. Traffic lane marking paint with chlorinated rubber base.
 - 2. Factory mixed, quick drying and non-bleeding, FS TTP-115C, Type III.
 - 3. Color: White. (Yellow and blue where required for delineation of pedestrian and fire lanes).

G. NEW PAVED ROADWAYS - EXECUTION

- a. Surface Preparation
 - i. Aggregate Base Course
 - 1. Check subgrade for compliance with elevations and section immediately before placing aggregate base material.

2. Place aggregate base material in compacted layers not more than 6 inches thick, unless continuing tests indicate the required results are being obtained with thicker layers.
3. In no case will more than 8 inches of compacted base be placed in one lift.
4. Spread, shape and compact all aggregate base material deposited on the subgrade during the same day.
5. Compact aggregate base course material to not less than 95 percent of maximum density: ASTM D1557, Method D.
6. Test density of compacted aggregate base course: ASTM D2167.
7. Conduct one test for each 2500 square yards of in-place material, but in no case, not less than one daily for each layer.

ii. Proof-Roll

1. Proof-roll prepared subbase surface using heavy, rubber-tired rollers.
 - a. Check for unstable areas.
 - b. Check for areas requiring additional compaction.
2. Notify Contractor of unsatisfactory conditions.
3. Do not begin paving work until such conditions have been corrected and are ready to receive paving.

iii. Loose and Foreign Material

1. Remove loose and foreign material from compacted subbase surface immediately before application of paving.
2. Power brooms or blowers, and hand brooming as required.
3. Do not displace subbase material.

iv. Prime Coats

1. Uniformly apply at a rate of 0.4 gallons per square yard over compacted and cleaned subbase surface.
2. Apply enough material to penetrate and seal, but not flood the surface.
3. Allow to cure and dry as long as required to attain penetration and evaporation, and in no case less than 24 hours unless otherwise acceptable to the Owner's Representative.
4. Blot excess asphalt with just enough sand to prevent pick-up under traffic.
5. Remove loose sand before paving.

v. Tack Coat

1. Dilute material with equal parts of water and apply to contact surfaces of previously constructed asphalt concrete and Portland cement concrete and similar surfaces.
2. Apply at rate of 0.15 gallons per square yard of surface.
3. Apply tack coat by brush to contact surface of curbs, gutters, manholes, and other structures projecting into or abutting asphalt concrete pavement.
4. Allow surfaces to dry until material is at condition of tackiness to receive pavement.

b. Preparing the mixtures

- i. Comply with the ASTM D995, for material storage, control, and mixing, and for plant equipment and operation.
- ii. Stockpiles
 - 1. Keep each component of the various-sized combined aggregate in separate stockpiles.
 - 2. Maintain stockpiles so that separate aggregate sizes will not be intermixed.
- iii. Heating
 - 1. Heat the asphalt cement at the mixing plant to viscosity at which it can be uniformly distributed throughout mixture.
 - 2. Use lowest possible temperature to suit temperature viscosity characteristics of asphalt.
 - 3. Do not exceed 350 degrees Fahrenheit.
- iv. Aggregate
 - 1. Heat-dry aggregate at recommended temperature to suit penetration grade and viscosity characteristics of asphalt cement, ambient temperature, and workability of mixture.
 - 2. Accurately weigh or measure dry aggregates and weigh or meter asphalt cement to comply with job-mix formula requirements.
- v. Mix aggregate and asphalt cement to achieve 90-95 percent of coated particles for base mixture and 85-90 percent of coated particles for surface mixture, when tested in accordance with ASTM D2489.
- vi. Transporting
 - 1. Transport asphaltic concrete mixtures from mixing site in trucks having tight, clean compartments.
 - 2. Coat hauling compartments with a lime-water mixture to prevent asphaltic concrete mixture from sticking.
 - 3. Elevate and drain compartment of excess mixture when transporting to protect from weather and to prevent loss of heat.
 - 4. Provide covers over asphaltic concrete mixture when transporting to protect from weather and to prevent loss of heat.
 - 5. During periods of cold weather for long distance deliveries, provide insulation around entire truck bed surfaces.
- c. Equipment
 - i. Bituminous Paver:
 - 1. Bituminous pavers shall be self-contained, power-propelled units, provided with an activated screed or strike-off assembly, equipped to be heated, and capable of spreading and finishing courses of bituminous plant mix material in lane widths applicable to the specified typical section and thicknesses shown on the plans. Materials for shoulders and similar

construction made by means of approved mechanical spreading equipment.

2. The paver shall be equipped with a receiving hopper having sufficient capacity for a uniform spreading operation. The hopper shall be equipped with a distribution system to place the mixture uniformly in front of the screed.

ii. Rolling Equipment

1. Pneumatic-tired Rollers: Pneumatic-tired rollers shall be of the self-propelled type consisting of two axles equipped with pneumatic tires mounted so as to completely cover the area to be compacted in a single pass. The wheels on at least one axle shall oscillate vertically, either singly or in pairs. Wobble-wheel rollers will not be permitted.
2. The wheels shall be equipped with smooth, wide tread compactor tires of equal size and diameter, capable of producing a uniform ground contact pressure on a level unyielding surface of not less than 80 pounds per square inch on all wheels.
3. Steel-Wheel Rollers: Steel-wheel rollers may be of three types; three-wheel rollers of 10 to 12 tons in weight, two-axle tandem rollers of 8 to 12 tons in weight, and three-axle tandem rollers of 12 to 18 tons in weight. These rollers shall be equipped with adequate power units and, under working conditions, shall develop a compression in the rear wheels of 250 to 350 pounds per inch of wheel width.

iii. Hand Tools:

1. Provide rakes, lutes, shovels, tampers, smoothing irons, pavement cutters, portable heaters, and other miscellaneous small tools to complete the work specified.

d. Placing the Mix

- i. Place asphaltic concrete mixture on prepared surface, spread and strike-off using paving machine.
- ii. Spread mixture at a minimum temperature of 225 degrees F.
- iii. Inaccessible and small areas may be placed by hand.
- iv. Place each course at thickness so that when compacted it will conform to the indicated grade, cross-section, finish thickness, and density indicated.
- v. Paver Placing
 1. Unless otherwise directed, begin placing along centerline of areas to be paved on crowned section, and at high side of sections on one-way slope, and in direction of traffic flow.

2. After first strip has been placed and rolled, place succeeding strips and extend rolling to overlap previous strips.
3. Complete base courses for a section before placing surface courses. Place mixture in as continuous an operation as practicable.

vi. Hand Placing

1. Spread, tamp, and finish mixture using hand tools in areas where machine spreading is not possible, as acceptable to the Owner's Representative.
2. Place mixture at a rate that will ensure handling and compaction before mixture becomes cooler than acceptable working temperature.

vii. Joints

1. Carefully make joints between old and new pavements, or between successive days' work, to ensure a continuous bond between adjoining work.
2. Construct joints to have same texture, density and smoothness as adjacent sections of asphalt concrete course.
3. Clean contact surfaces free of sand, dirt or other objectionable material and supply tack coat.
4. Offset transverse joints in succeeding courses not less than 24 inches.
5. Cut back edge of previously placed course to expose an even, vertical surface for full course thickness.
6. When the edges of longitudinal joints are irregular, honeycombed, or inadequately compacted, cut back unsatisfactory sections to expose an even, vertical surface for full course thickness.

viii. Curbs

1. Place curbs over in-place and compacted pavement surfaces.
2. Apply a light tack coat unless pavement surface is still tacky and free from dust.
3. Place curb materials to cross section shown using machine-laying methods unless otherwise acceptable to the Owner's Representative.
4. Adjust rate of placement to ensure bonding and compaction of mixture as it is placed.
5. Material may be placed by hand in wood or metal form when permitted by the Owner's Representative.
6. Tamp hand-placed materials and screed to smooth finish.
7. Remove forms as soon as material has cooled to air temperature.

e. Compacting the Mix

- i. After a course has been screeded, it shall be rolled with power drive rollers and shall be checked and inequalities adjusted, with all dropping of fat, sandy accumulations from the screed removed, and all fat spots from any source shall be removed and replaced by satisfactory material.
- ii. Three-wheel rollers shall be used for the first rolling pass for each course. At least two rollers will be required at all times. The number of rollers shall be sufficient to obtain satisfactory compaction while the mixture is in a workable condition; as a guide, when production and finishing exceeds 90 tons per hours, at least one additional roller shall be furnished for every additional 50 tons per hour or fraction thereof. Delay in rolling freshly placed mixture will not be permitted. Rolling shall continue until compaction is obtained.
- iii. Rolling of mix shall consist of six separate operations in the following order: (1) transverse joints, (2) longitudinal joints, (3) edges, (4) initial or breakdown rolling, (5) second rolling, (6) finishing rolling. This rolling procedure shall be carried out when paving in echelon or abutting a previously placed section. When paving in echelon, two or three inches of the edge which the second paver is following shall be left unrolled, and rolled when the joint between the lanes is rolled. Edges shall not be exposed long enough for the temperature of the completed mix to drop below 150 degrees F. After the longitudinal joints and edges have been compacted, rolling shall start longitudinally at the edge and gradually progress toward the center of the pavement, except on super-elevated curves the rolling shall begin on the low side and progress to the high side, overlapping on successive trips by about one-half the width of the drive wheel of the roller.

Alternate trips of the roller shall be terminated in steps at least three feet distant from any preceding stop, and such stops shall be so regulated as to preclude the trapping of any water on the rolled surface.

During rolling, the roller wheels shall be kept moist with only sufficient water to avoid picking up the material. The rollers shall move at a slow but uniform speed (not to exceed three miles per hour for steel wheel rollers or five miles per hour for pneumatic tire rollers) with the drive roll or wheel nearest the paver. The line of rolling shall not be suddenly changed or the direction of rolling suddenly reversed, thereby displacing the mix. If rolling causes displacement of the material, the affected areas shall be loosened at once with lutes or shovels and restored to the original grade of the loose material before being rolled.

- iv. In base widening too narrow for the rollers mentioned above, and next to curbs, approved power driven trench rollers may be used. In areas inaccessible to any roller, compaction shall be secured by the use of tampers or other equipment.
- v. Patching

1. Remove and replace defective areas.
2. Cut-out and fill with fresh, hot asphaltic concrete.
3. Compact by rolling to specified surface density and smoothness.
4. Remove defective areas for full depth of course.
5. Cut sides perpendicular and parallel to direction of traffic with edges vertical.
6. Apply tack coat to exposed surfaces before placing new asphaltic concrete mixture.

f. Marking Asphaltic Concrete Paving

i. Cleaning

1. Sweep surface with power broom supplemented by hand brooms to remove loose material and dirt.
2. Do not begin marking asphaltic concrete paving until acceptable to the Owner's Representative.

ii. Apply paint with mechanical equipment.

1. Provide uniform straight edges.
2. Not less than two separate coats in accordance with manufacturer's recommended rates.

g. Cleaning and Protection

i. Cleaning: After completion of paving operations, clean surfaces of excess or spilled asphalt materials to the satisfaction of the Owner's Representative.

ii. Protection

1. After final rolling, do not permit vehicular traffic on asphaltic concrete paving until it has cooled and hardened, and in no case sooner than 6 hours.
2. Provide barricades and warning devices as required to protect pavement and the general public.
3. Cover openings of structures in the area of paving until permanent coverings are placed.

H. PAVEMENT LINE STRIPING

- a. Pavement line striping shall be as specified in the Special Conditions and on the plans and the Proposal of scheduled items.

I. REMOVING AND RESETTING

- a. When so specified, sections of existing curb, gutter or sidewalks or combination curb and gutter may be removed in lengths of four feet or more and reset provided they are not injured or damaged in the process. Any section found unsuitable for resetting shall be carefully stored until the pipeline or other work has been completed. It shall then be cleaned and readjusted upon a firm compacted subgrade prepared as specified herein for new work and set to the

proper line and grade, after which the joints shall be filled with an approved bituminous filler. All joints and tops shall be redressed when necessary to provide a smooth even surface with the old work. After the joints have set, the replaced sections shall be backfilled, tamped, and given a finished, even surface in the manner specified for new work.

J. DETERMINATION OF PAY QUANTITIES

- a. On unit price contracts the quantities of sidewalks for new construction for which payment will be allowed shall be expressed in square yards of area, to the nearest 1/10 square yard. For replacement, the quantities shall be computed by lineal feet from the trench width shown on the plans and actual horizontal length measured in place.
- b. On unit price contracts the quantities of curb and gutter for new construction for which payment will be allowed shall be expressed in cubic yards, to the nearest cubic yard. On unit price contracts the quantities of curb and gutter for replacement shall be expressed in lineal feet, to the nearest 1/10 foot. For new construction, the quantities shall be the horizontal length as measured in place multiplied by the correlating TDOT factor for conversion to cubic yards. For replacement, the quantities shall be the horizontal length which shall be measured in the field.
- c. No specific payment will be allowed for the replacement of surfacing on graveled or similarly surfaced streets and driveways or for paved surfaces damaged or removed beyond the specified limits of the work.

K. PAYMENT

- a. On lump sum contracts no separate payment will be made for the construction or replacing of sidewalks, pavement and surfacing, nor for other work performed under this Division.
- b. On unit price contracts payment for sidewalks, pavement, and surfacing constructed or replaced under these specifications shall be made for the quantities determined in the manner specified above at the unit contract prices per square yard, per ton or per lineal foot, as applicable, for items listed under Division V of the materials, labor, tools, plant and other expense in connection with or incidental to the construction or replacement of sidewalks, pavements and surfacing.

END OF SECTION